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ORIGINAL ARTICLES.

ROOF GARDENS ON CITY PRIVATE HOUSES.[1]

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How may we multiply safe and sunny playgrounds for children dwelling on Manhattan Island? The object of this communication is to suggest how city roofs may be adapted to such needs, to give illustrations of one such approved playground, and to describe the excellent results shown in the health of the children concerned.

Fig. 1.

Snow lady.

A friend bought a house on the East Side uptown, abreast of Central Park, determined to try the experiment of keeping a family of children aged three, five and seven, in town. The last three winters they had spent on Long Island. The parents chose the locality near the Park and on high ground, with the thought of approximating the conditions of country air, hoping that an added year on the life of the children might make the experiment successful.

The children had regularly each fall returned to town in robust health. They gradually lost their appetite, became listless, sallow and languid, caught cold, were confined to the house, were classed as grip patients, went from bad to worse, till the parents picked them up and fled to the country house again. This had been repeated in all three times. Once in the country the children spent much of their time in the open air, and became well and hearty.

[1] Read before the New York Academy of Medicine (Pediatric Section), March 2, 1905.

"Why were they not sent out into the Park half a block away?" someone will ask. They were sent to the Park daily. Soon they came to loathe the thought of going out. In the country they had been accustomed to feed their chickens and rabbits when out of doors. In short, they loitered many hours in the open air, playing quietly, pleasantly entertained. They took no notice of the time they were out. It was not done by the watch. They *lived* in the open air.

In town they must be dressed fit for the Park, the nurse must dress herself properly, and by the time they are all ready to go out they are too

Fig. 2.

Trolley-car.

warm in their wraps, impatient, pulling in divergent directions. After twenty minutes perhaps they emerge from the house. In the short walk to the Park they must dodge automobiles, boys on roller skates, grocer carts, bicycles, baby carriages and all varieties of out-of-temper, hurrying people. Within the Park they must "keep off the grass," must not "pick flower, fruit or leaf," must not get up on the iron benches with their feet. What they may do is to trail along with the nurse till the time is up and they can go home. Their wildest diversion is to hang to the leash of an eager dog, and see that he does not get away and get shot by the police.

If one direct that children spend as many hours in the Park as possible on all but positively bad days, the resulting report is usually this: "Oh, yes, the children are in the Park all day." What does "all day" mean, when really figured out in hours? After the children have been in the

Park an hour they begin to be tired and look tired. They get home, having successfully dodged the self-moving bolts hurtling along Fifth Avenue, also other nerve and life destroy-

Fig. 3.

Tunneling—Subway.

ers. After an hour and three-quarters they return to their home cross, tired, the youngest jaded and pale.

The often-heard statement "Out all day in the Park" frequently means, when figured out, an hour and three-quarters in the morning and an hour in the afternoon. This, then, is the life to which many children return after six and eight months in the country, where it is exceptional for them to be indoors at all in sunlight hours.

I was asked to see what could be done for this family who had spent three winters on Long Island. Their new house faced south, on rising ground, was five stories high, and upon the top was a half story for servants. In front of this half story, and facing south, was a tin roof 24x24 feet, without a nuisance. The vent pipes opened above the half story. Here was an area of 576 square feet, 60 to 70 feet in air, flooded with sunshine, above the dustline, free from noise and confusion. From its surface Central Park, less than half a block away, lay as a private lawn under the eye, the view south was unbroken to Murray Hill, the New Jersey shore and Long Island Sound were distinguishable. In short, there was an unbroken horizon south, west and east, and permanent protection on the north. Upon this area the sun shone all day, the clear upper air fell without its usual admixture of dust: no noise and no confusion could intrude.

Carpenters were put to work to cover the tin roof, laying a floor of narrow strips, boards four inches wide, with an interval of a quarter of an inch between. The floor was laid in sections which could be taken up as desired, to repair the tin roof or recover lost toys. The open flooring allowed the boards to dry quickly.

While this work was just beginning the youngest boy seemed more than ever drooping and run down, and it was said, "He looks very white when he comes in from the Park." "Hurry up the roof," was the reply, "and when a quarter of the flooring is laid, put him on it. The carpenters will entertain him, and the ends of boards and bits of timber will please him. Loitering in the open air is what he wants. *Air with ease* is his prescription."

The floor once laid, the area was surrounded with a wire net, and the enclosure, pen, or "chicken house," as some friend named it, was ready for use. This enclosure was quickly and inexpensively constructed. In anticipation of vigorous winter weather a permanent partition was raised on the northern half of the west side, nearest the half story, the "deck house." Canvas slides were adjusted in such a way that, at will, the "chicken house" could be converted into a pen. Cold winds could thus be shut off ("modified" is a favorite word just now,) while the sun could always shine in.

One more precaution was taken. An awning was spread over the northern third, rolling down from the house cornice upon a frame. This could be put up or let down at will. Again, in case of drizzling weather, an apron was ready to be extended from the point where the awning ended on the north, nearly to the southern limit. The result of this was that the children could play out in all weather. If it rained or snowed heavily, the strong awning protected eight or nine feet of the north end and kept it dry, the permanent board partition protected from the prevailing

Fig. 4.

Street cleaning.

west wind. In drizzling light rain the apron protected nearly the whole floor.

The roof playground has stood the test, and proved available for all weathers.

What has been the result? It is now five

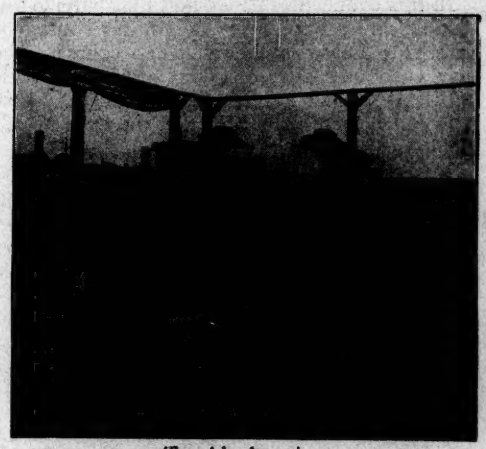
months since the beginning of the experiment. Within two weeks the smallest boy was pronounced better than he had been since he was eleven months old. He had always been fatigued in getting the amount of outdoor exercise which he was supposed to need. He dragged about, and was rather a quiet, demure little man. Any other child could take his toys away from him without remonstrance. At present writing it is said he used to be too tired to have a character, now he has rather too much. He is obstinate and self-willed. Last night he was put to bed without saying good-night to his parents, because he flew into such a fury and was so obstreperous.

For five hours every day, the blizzard days included, these now vigorous children have been out on the roof, playing at making snow men and snow ladies, houses, tunnels, etc. They have a toboggan slide, a cave, mounds and tunnels in the snow. It is not easy to get them to keep on their mittens. They are so warm-blooded that they complain that they feel too hot, they can't breathe with their mittens on. Most of the time the mittens hang by their sides.

The net result of the experiment is that the three children have been able to spend the winter in town, the family is undivided. To use the words of their best friend, they have been able to live a civilized life for at least one more winter. Not only have the children kept well, but they have been better than in all their lives before. The air of New York City is really good after one gets above the drifts and swirls of dust of the street level. Probably, too, the food has been more pleasing than the country markets supply. They have consumed vast quantities of food material. The children have not taken any medical treatment. The habitual colds of winter have not been present. It is impossible to find in town or country a more exuberant family of three, so entirely emancipated from the ills of town dwellers, so absolutely unsusceptible to cold, so savagely hungry, such sound sleepers. One can only think and speak of them as young polar bears. In the days of the blizzard the youngest was prevailed on to wear mittens for a time. Their complexions are of such bright hue that when the two elder children are on the street passers stop and turn to look at them. The Park policeman asked how long they had been over, and if they were Irish or English. No one could deceive him, he assured the nurse, no such color ever showed in American faces. The roundsmen, the snow-plough men and the street-cleaners know these little uptown fresh air children, and designate them in their own way as little polar bears and St. Bernards.

An interesting observation has been the fondness the children have shown for their aerie. Until the ice skating in the Park put a new attraction before them, the older two begged to stay and play on the roof. They tired of dragging and "keeping off the grass." On the roof their imagination converted ordinary toys into fire engines, wild animals, etc. Probably the one plaything which has given more prolonged pleasure than any other is an upturned wooden table and a cord which figured as a trolley car. With this the three have played for hours, pushing, pulling, filling their lungs with good dust-free aid. With sled and wheelbarrow they are a street-cleaning department. With shovel and spade they mine and tunnel. Indeed, they really work hard. They occasionally vary the angelic mood with terrible displays of temper, they so far forget their long ancestry of good blood as to descend to furious battles among themselves. The small boy who was formerly "too tired to have a character" has steadily advanced to second place, and is now trying for first. He has fought it out with his sister, and now struggles for supremacy with his older brother. They love well, eat like wolves, sleep well and fight gloriously. Indeed, the proud mother must many times feel, before her friends with their well-behaved, anemic children, that her young thoroughbreds are in the eyes of her visitors wild things from the polar regions.

Fig. 5.



Trouble brewing.

These children spend nineteen hours a day in outdoor air, five hours on the roof, fourteen hours in a sleeping room with windows open. The room is cold. Water freezes in it, the screen blows over, snow drifts in but does not melt.

Child No. 3 shows the greatest improvement. It will be remembered that the "roof paddock" was constructed largely for him. He has been on the street but once, and he has now grown so much that he has within a week been mistaken for the older boy.

Many odd nooks and angles are easily adapted to the purpose of a playground in an inexpensive way. There are but two essentials: the sun must come in, and the harsh winds stay out. A pen with canvas sides answers the purpose.

A word of testimony from the graduate nurse in charge of these children. In November last

she looked "worn out" with all the significance of the expression as applied to a nurse who has been at her work steadily for ten years. Last week she informed me spontaneously that she had for the first time in her life gained weight in winter. She had gained five pounds in five months, the same that each of the growing children had. Furthermore she was not nervous, was so stupidly sleepy at nine o'clock at night that she went to bed soon after the children did, and in the morning, which surprised her more than all, her appetite for breakfast was such as she had never known since adolescence.

I mention these details because it is true, word for word, with the testimony of four other nurses.

One word of caution on the part of the parents. In inaugurating this new and radical treatment, a wise nurse is a necessity. For the first two weeks children unaccustomed to such a regimen should be carefully watched until they become accustomed to it. After two weeks the children and nurses are not susceptible to cold.

In this connection I may add that parents with "sand" are a necessity. It requires courageous parents to follow implicitly such a course. They may encounter adverse criticism, and be called "mad as March hares," as were these. Those who called them mad, now add the clause, "The children are wonders!"

The total cost of this roof playground was a little more than $150. The saving in the wages of one attendant and in the difference of cost in clothing necessary to play on a retired roof garden and to go into the Park would fully equal this amount in five months.

57 East Seventy-ninth Street.

FIFTEEN YEARS' EXPERIENCE IN THE TREATMENT OF TYPHOID FEVER AT THE ROOSEVELT HOSPITAL.

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There is no acute disease which seems to afford better opportunities than typhoid fever for testing the question whether we can beneficially modify its course by measures of treatment. This is because its onset is usually gradual, with a subsequent prolonged course, during which it progresses deliberately through definite successive stages, with dangers or complications so characteristic of each that they may be foreseen or expected, till finally it ends as gradually as it began.

In each of these respects it markedly contrasts with pneumonia, which commonly sets in abruptly, and then often develops severe symptoms so rapidly that its fatal issue may practically be decided in less than a week. If a patient should succumb to a surgical injury in so short a time as some do to a croupous pneumonia, it generally would be inferred that nothing could have saved him. Likewise in pneumonia, it is often doubtful whether it be not beyond our power to counteract the blow to vitality already inflicted before we can begin to do anything.

Not so typhoid fever. Its dangers ordinarily arise from definitely timed derangements of one function after another, each contributing a greater or less share to the condition, according to the particular case. We, therefore, appear to be furnished with special indications for lessening the effects of these different derangements each in turn, and by so much improving the chances of the patient.

Nevertheless, the question is often raised whether the treatment of typhoid fever is any more successful now than it was thirty-five years ago. In England, judging from their hospital statistics, the mortality from this fever seems to remain about the same that it ever was. In a paper read before the Harveian Society, November, 1899, Dr. Sidney Phillips, physician to the London Fever Hospital, maintains that the chances of recovery of a person contracting typhoid fever to-day are little or no better than they were fifty years ago, notwithstanding the advances in medical knowledge, improved nursing and hygienic conditions. Murchison found that the mortality of patients in the London Fever Hospital during the ten years ending 1862 was 18.5 per cent., and Dr. Phillips says that all the figures available to him in the same Fever Hospital and in other London institutions, as well as the Registrar-General's returns, show that the mortality from 1890 to 1897 still remained over 18 per cent. The inference which Dr. Phillips draws from these figures is that typhoid fever will be found to kill 18.5 per cent. of its victims in London no matter what the treatment may be.

Whatever progress, therefore, has been gained in the last fifty years in medical knowledge, and that has been great, so far as these figures go, the treatment of serious acute diseases has made no advance at all.

As regards pneumonia, we must regretfully admit, I think, that there has been little diminution, if at all, in its mortality in the practice of our generation. It still remains the same dread disease as ever. But I hold that it is far otherwise with typhoid fever, the mortality of which, according to my recorded experience in hospital practice for the past thirty years, should not be much over three per cent. among those patients who give us an opportunity to treat them. I make this statement at the outset, with full recognition of the fact that no such conclusions should have weight, unless they are based upon carefully made and recorded observations extending over prolonged periods. Typhoid fever shares with other acute infections a varying severity according to what is termed the epidemic constitution of the particular season. The experience of one year, therefore, is no criterion of what it will be the following year. Hence, I submit this review of fifteen years' experience in its treatment in my wards at the

Roosevelt Hospital, with results, which I do not think can be only by accident or coincidence, so much better than the above cited statistics of the London hospitals. For the compilation of these statistics I am indebted to my former House Physician, Dr. E. V. Hubbard.

	Total.	Males.	Females.
Total admissions to my wards at the Roosevelt Hospital, during four months, from May to July, and September to November, each year, from May 1, 1889, to November 1, 1904	574	398	176
Total number of deaths..... or, 7.05 per cent. of total number.	40	31	19
But the total number of patients who died within a week after admission was..... or, 57 per cent. of all deaths, and 80 per cent. of these did not survive the fourth day.	23	15	8
Of the remaining 551 patients who were in the hospital for more than a week, there were 17 deaths, or 3.09 per cent.			

It readily can be shown that the percentage of the fatality in the total number of admissions to the hospital in this period, viz., 7.05 per cent., affords no just criterion of the results of treatment, for the following reasons: A large proportion of the patients are not sent to hospitals with this fever until the disease is in advanced stage. Some, in fact, in my service were practically moribund on admission, and only served to swell the mortality figures. When the question, therefore, is about the efficiency or otherwise of any line of treatment, some distinction should be made between patients who gave some opportunity, in respect to time corresponding to the usual length of the disease, for the treatment to be tried, and those who were so far gone on admission that practically there was no chance to test in them that or any other form of treatment.

Thus, of the total deaths, 23 or 57 per cent. died within the first week after admission, and 80 per cent. of these did not survive the fourth day; only two of the 23 reached the seventh day of their stay in the hospital, the beginning of the illness in all of this class ranging from fifteen days to nine weeks before they came in, while no less than seven succumbed to perforation within four days after admission. These facts only confirm me in my belief that the proper management of the patient, as hereinafter detailed, within the first week or ten days of the illness, can materially modify its subsequent course. The above percentage of the total number of deaths, however, should be borne in mind in comparison with the 18.5 per cent. of the London hospitals, as it is to be presumed that the London figures also cover all deaths occurring in those institutions, whether among those admitted early or late in the disease.

One drawback to the completeness of my report, however, should be mentioned, namely, that, in common with my colleagues at the Roosevelt Hospital, my terms for service cover only two months at a time, May and June, and then September and October. According to the returns of the Health Board, the first two months correspond to the time of the least prevalence of typhoid fever in New York, while in September and October it is at its highest. In order, therefore, to make the test of treatment by my method as complete as I can, the number of deaths includes any which occurred up to November 14, or two weeks after my service terminates, as I presume that this subsequent period would fairly balance the exclusion of the first week above mentioned.

Statistics of mortality, however, are not the only test of the efficacy of any method of treatment, and particularly so in typhoid fever. How the patients pass through the attack in respect to the occurrence and to the gravity of its various accompaniments, and in what condition it leaves those who recover from it, are much more satisfactory indications whether the disease is amenable to certain remedial measures or not. Whether any progress, therefore, has been gained in the past thirty-five years in the management of typhoid fever would be best illustrated by a comparison between the incidence and the degree of the leading symptoms of typhoid fever as they are described in such text-books as Watson's and Bristowe's of forty years ago, and those found in the clinical histories now presented.

Therefore, following Bristowe's enumeration of symptoms we will first note the diarrhea. He speaks of it as generally associated with the initial symptoms, though sometimes absent then, to become a striking feature of the disease, and rarely absent from the second week on. He deprecates, on this account, the use of laxatives, unless perhaps a small dose of rhubarb or of castor oil during the first week, and he regards the recommendations of Trousseau and of George Johnson, that the diarrhea should be allowed to run its course, as erroneous and dangerous, preferring to check it by the systematic administration of tannic acid, sulphuric acid, lead and opium, etc.

In my own records, diarrhea occurring at all after the first week after admission is reported in only 39, or 12 per cent., and in the majority of them it was not severe, so that there are very few prescriptions recorded as administered for this symptom. On the contrary, constipation, which had to be relieved by enemata, was of frequent occurrence. The absence of diarrhea in typhoid fever is not confined to my hospital experience, but has been reported of late years as common in American hospitals generally, and to a less extent in the English reports. I would ascribe this change in a large measure to a change in the feeding of the patient. Thirty years ago the use of beef tea in typhoid fever

was almost universal. I believe that hardly any articles are so prone to fermentation in the alimentary canal, and nothing is so apt to induce tympanites, as the continuous administration day and night of meat broths in fibrile conditions.

Thirty years ago tympanites was so constant a symptom that it was rated as a diagnostic feature of the disease. As Watson says: "If you make pressure on the abdomen, you will find it hard and unnaturally resisting, as though its walls were much distended, but whether large or not, Dr. Jenner states that its shape is invariably the same and peculiar. The patient is never pot-bellied, but tub-shaped."

As I have always placed a good deal of store upon this symptom, I have had its occurrence noted in every case, so that even its temporary presence might not be overlooked. According to my impression, so infrequently had it been a marked symptom in any but the fatal cases, that I was surprised to find it recorded in 101, or 18 per cent. On reviewing this record, however, it was found that about 40 per cent. of the whole number of instances of tympanites occurred in September and October, 1898, and were noted in 39 soldiers admitted for typhoid fever contracted at various camps in our own country and in Cuba during the Spanish-American War. Of these, six had malaria as well, in four of whom *Plasmodium malariæ* permanently disappeared after the typhoid fever ran its course, while in two others chills and fever, with a reappearance of the plasmodium, took place after they had fairly convalesced from typhoid. It was probably owing to the reduced physical condition of these soldiers from the poor food and other hardships of camp life that they so generally presented this symptom on admission. Deducting, therefore, these soldiers, the occurrence of tympanites in all is recorded at most in only about 62 patients, or about 26 per cent. Its presence is generally noted in the histories of those who were admitted late in the disease, and in the majority of those it disappeared soon afterward under treatment. The prevention of this particular symptom, I believe not to be without bearing upon our question, whether we can favorably modify the cause of the fever, for tympanites is both a sign and a complication. It is a sign of weakened innervation and loss of the normal antiseptic power in the gastro-intestinal secretions, on the one hand, and the direct cause of cardiac and of pulmonary circulatory enfeeblement on the other; while it cannot be without some effect in increasing the tendency to accidents at the seats of the intestinal ulceration. I always regard a persistent tympanites in a typhoid patient with uneasiness, and any method of treatment in which this symptom becomes a rarity I cannot but consider as materially beneficial.

Hemorrhage from the bowels occurred in one per cent. In no instance was it directly fatal, and it was readily controlled by measures to be mentioned. It is always, however, a complication of some moment, as it may oblige us to suspend the Brand bath at a critical period of the hyperpyrexia. One man, while sitting up convalescent on the thirty-second day of his disease, began to bleed from nearly every mucous membrane of his body. He died in two days after excessive hematuria.

Among the 31 deaths of male patients, seven succumbed to intestinal perforation. One case also occurred in a woman during a relapse, after she had been in the hospital five weeks, another in a boy who had been in the hospital ten days. All the others occurred in patients who had been there less than a week after admission. The boy was operated upon and recovered. Five others were operated upon, but died.

To continue our comparison with the descriptions of former text-books: Dr. Bristowe proceeds to describe the classical "typhoid condition," into which he states a large proportion of the cases pass in the second week. "The elevation of temperature continues, the rash still comes out, the diarrhea still persists, the tongue becomes dry and brown and traversed by deep fissures; the lips and teeth covered with sordes; the mind grows dull and apathetic, and delirium, sometimes violent, sometimes busy, sometimes muttering, supervenes; tremors, subsultus and involuntary passage of evacuations takes place," etc.

I have no hesitation in saying that our present forms of treatment have done away with the "typhoid condition" here described so entirely that repeatedly successive house physicians have said to me that they had not seen cases of the kind and would have to go elsewhere to find them. That this picture of a patient's state should become a rarity is certainly an evidence of improved therapeutics, and is shown by the following reports of the incidence of its constituent symptoms. Thus, as to delirium: Out of the whole number admitted it was noted in 60, or 16 per cent. But of these 26, or nearly 50 per cent., were delirious on admission, 12 of whom died within that week, whereas the rest recovered from their delirium in a week or less. The entire absence of delirium at any period of their illness in the remaining 517 patients, or 94 per cent. of the whole number, is at least an indication that they hardly passed into the "typhoid condition" at any time in the course of the disease; while on the other hand, nothing testifies so clearly, in my opinion, to the benefits of treatment as the absence of all signs of mental disturbance in the majority of these ward patients. Some of them were drowsy, but tremors and subsultus were too rarely observed to figure among the clinical symptoms. The state of the tongue was always carefully noted, but fissure is not once recorded. Sordes on the teeth and lips were present in some patients on admission, but in every case soon disappeared, and is never recorded as developing in patients after admis-

sion. Of this fact I feel quite sure, for it has seemed to me that a remedy soon to be mentioned is commonly quite efficacious in preventing general dryness of the tongue if administered at the first appearance of this symptom at the tip.

Of other complications in our series, pneumonia occurred in 11, or 1.9 per cent., bronchitis in 65, or 18 per cent., but it was an initial symptom in more than 40 per cent. of the cases and was easily controlled.

Peripheral neuritis occurred in 28, or not quite seven per cent., and in each case was limited to the feet. The causation of this symptom in typhoid is apparently purely mechanical, from the foot drop induced by prolonged relaxation of the leg muscles, thus causing the nerves to be put upon a continuous stretch. I, therefore, am always particular to direct that the feet have a foot rest in the third week, with care that the weight of the bedclothes should be taken off them by a cradle. Neglect of these precautions may make the recovery of the power of walking very slow during convalescence. The best local application to relieve the tenderness and pain in the feet is to wrap them up twice a day for half an hour in cloths wet with an infusion of red pepper, one dram to the pint of hot water. The peripheral neuritis in many patients long confined to bed with phthisis has much the same characters.

Phlebitis occurred in 11. In two of them it was very troublesome, and much prolonged the convalescence. Local applications of the strong tincture of iodine, or of silver nitrate, 20 grains to the ounce, should be applied over the affected vein very early.

Relapses occurred in 62, or no less than 18 per cent. of all cases. Though some of them seemed to occur in close sequence to some imprudence in eating during the hungry period of convalescence, yet in many instances no such cause could be assigned. Moreover, the tendency to relapse is much more marked in some years than in others, rising in one year to 30 per cent. of all cases, so that the etiology of these recrudescences is obscure. In London also it is noted that the three per cent. of relapses given by Murchison has now risen to 13 per cent. As a rule, the prognosis is not unfavorable, except in those patients who begin the relapse with vomiting. It seems to me, however, that relapses are more frequent in that class of patients in whom the brunt of the attack appears to fall on the intestine, more so than with those characterized from the beginning with tendency to hyperpyrexia. A patient with the symptoms of pronounced abdominal lesions, such as persistent tympanites and tongue tremor, should not be allowed solid food in any form for ten days after his temperature has fallen to normal.

The treatment of typhoid fever should be both of a general kind, to be prescribed in all its details for every case from the beginning, no matter how mild the type may seem to be (for we are never sure but a mild case may at any time develop severe symptoms); and particular, according to the special tendencies developing in the course of the disease. Those special tendencies should be early recognized and definitely dealt with, for routine treatment is no more justifiable in this than in any other serious complaint.

The general line of treatment, which in the majority of cases is the only treatment needed, I would describe as follows:

First, early attention to the state of the kidneys. During the first week or ten days there is a marked tendency to a diminution in the secretion of urine. This I regard as an initial complication, whose effects may render the subsequent course much more severe, by favoring the increased multiplication of the typhoid bacillus in the blood, owing to the retention of excrementitious matters in it from the early failure of renal elimination. Late researches show that the typhoid bacilli, instead of developing only locally in the intestine, may charge the blood as early as the end of the first week. I would recommend, therefore, a recourse in all cases in the first two weeks of the fever, to the most certain diuretic which we possess, namely, rectal irrigation with hot normal saline, twice a day. Kemp's rectal irrigator is the best instrument for this purpose that I know of, using with it about four gallons each time, at a temperature of 115° to 120° F. The flow should run out as fast as it runs in, and it so constantly increases the urinary secretion that I have no doubt flow, from numerous comparative observations between those who had it and those who were without it, that the course of the fever is distinctly changed for the better by this measure.

In some cases acute nephritis develops comparatively early in the disease, and then constitutes a serious complication, with a tendency to death from uremic coma with pulmonary edema. The causation of this complication is a septic invasion of the kidneys by the *Bacillus coli*, and should be promptly dealt with by the administration of ten grains of urotropin, always along with ten grains of sodium benzoate, to prevent irritation of the kidneys by the urotropin. It is striking to note how soon this remedy lessens the percentage of albumin in the urine, and lessens the number of casts along with improvement in the general symptoms of a uremic kind. When improvement occurs, the intervals of the dosing should be lengthened.

One of the best procedures in the first stage of the fever is intestinal disinfection by a calomel purge, given every other night till the middle of the third week. My usual dose is five grains of calomel and thirty-five grains of compound jalap powder. It promptly stops diarrhea, if that be present, and is remarkable for lowering the febrile temperature in the first week, often from one to three degrees compared with its pre-

vious range. It acts well also in promoting the secretion of urine. After the middle of the third week it is omitted owing to risk of hemorrhage from cathartics.

How to feed the patient is a prime question. There is nothing so preventible in the majority of these patients as the extreme wasting and general weakness which is so conspicuous in convalescence with many who have been inadequately or imperfectly fed during their long experience of fever. The starvation plan of treatment is preposterous, for we ought always to aim to maintain the nutrition of the muscular tissues, as that includes the nutrition and strength of the heart, on which so much depends, and it is the muscular tissues which suffer most in all pyrexias. It happens, however, that there is a special difficulty in this disease to secure the proper digestion, and hence the assimilation of food. That difficulty is due to the fact that typhoid fever diminishes the peptic power of the stomach more than any other known disease, including gastric cancer itself, as was shown by Fenwick, who on scraping the mucous membrane of patients dying with this fever, found that it had less pepsin than the stomachs of the others dying after the most wasting of diseases, such as phthisis, diabetes, etc. In some of the typhoid cases, not a trace of pepsin could be found.

Bearing this fact in mind, we should regard the stomach of a typhoid patient as having reverted to the weakness of a newly born infant. The only food for such a condition is fluid food, and of that, therefore, milk is the sole article which contains every ingredient to support life. But cow's milk, as such, cannot safely be given to an infant, nor is it any better suited for a typhoid patient. Cow's milk should invariably be diluted, for them, with lime water in the proportion of fully one-half, and in some cases, as shown by the presence of undigested curds in the passages, with even two-thirds of lime water, with the addition of salt, as it is a peculiarity of typhoid, as also of pneumonia, to have the chlorides entirely disappear from the urine. I choose lime water because it is also an antiseptic, and thus counteracts gastric tympanites. The administration of simple pure milk in this fever, I am sure, is responsible for many untoward developments. Besides lime water, I have for many years kept up the stated administration of five grains of scale pepsin, or of ten grains of saccharated pepsin, every three hours for the twenty-four, and I am sure that it shows the good results in practice, which we would expect from it on theoretical grounds, in the maintenance of the nutrition of the patients. I have often heard it remarked by visitors, that the patients in my wards did not in their appearance show much effect from the serious disease which they were passing through.

The systematic employment of intestinal antiseptics is of great importance. Some reasoners claim that it is impossible to disinfect the alimentary canal, because it will still contain millions of bacteria whatever we do. It is difficult to have patience with this talk, because it assumes that disinfection is synonymous with sterilization, whereas we are, while in the best of health, daily kept from being fatally poisoned by our own intestinal contents, through the normal check to the action of putrefactive bacteria by the antiseptic properties of healthy digestive secretions. Those normal secretions are so diminished in typhoid fever that decomposition of the gastro-intestinal contents proceeds apace, with its accompaniments of generation of gas and diarrhea from the acrid character of the intestinal contents. Disinfect, and then both tympanites and diarrhea cease.

Much the most serviceable of all these disinfectants is bismuth, owing to its non-irritating character, and its locally sedative properties, which cannot be said of other agents often employed, such as salol. I use ten to twenty grains of the subcarbonate, given along with the pepsin every three hours, or from 80 to 160 grains a day. Occasionally, if tympanites is persistent, five grains of the sulphocarbolate of soda is added to each dose.

With the first sign of dryness at the tip of the tongue, the oil of turpentine in 15 to 20 minim doses is added, given in mucilage every three hours till the tongue is moist again.

When cardiac weakness develops, alcoholic stimulants are given in the form of whisky. I object to repeated small doses, such as half an ounce, and much prefer an ounce at a time every three hours, given after milk. At first alcohol should be given only after midnight, then, as the fever continues, in the evening, and then in the afternoon. It is better to omit it in the forenoon, for that is the natural period of lessened fever and prostration. The secret of giving alcohol is not to look upon it as possessing any continuous sustaining power, but only that of a temporary stimulant for times of prostration, and hence the dose should be large enough to produce stimulation.

Strychnine is very commonly regarded as a needed cardiac stimulant in this affection. Its routine and persistent administration is mischievous, and it is well to suspend it every few days, and note the effect. Occasionally in pronounced cardiac debility, I prescribe it in combination in a pill of

℞ Strychnine sulph..... .....gr. ss
Caffeine citrat .....grs. xxxvi
Sparteine sulph..... .....grs. xv
Ext. taraxici .....q.s.
M. Div. in pilul. xx. S. One every three hours.

Much the most certain of all cardiac stimulants, however, is camphor given subcutaneously in 7½ gr. doses dissolved in 20 minims of sterilized almond or olive oil. I have seen it succeed in conditions of collapse in typhoid, as well as in pneumonia, when every other heart stimulant

had failed. It may be repeated once an hour in urgent cases, or once in three hours.

Such has been my treatment for all ordinary cases so far as medicines go. But for thirty years I have regarded the Brand bath as the most effective of all agents at our command in typhoid fever. Without it, I should not care to treat a typhoid patient; and as will be noted, I have not feared to keep a patient in a bath at 70° F. for forty-seven minutes, because her temperature would not give in before. After that we had no further trouble, because from a condition which threatened death from hyperpyrexia, she changed to a case of mild typhoid and progressed steadily to recovery. I am sure that when the physician finds the temperature either increase after the cold bath, or begin very soon to do so, instead of losing heart he ought to grow bolder, till the thermometer shows that he is carrying the day with this invaluable remedy.

About the action of the Brand bath, it ought to be emphasized at the outset that is is not simply because it lowers the temperature. We have in the coal tar derivatives as certain antipyretics as it is, with this difference, that with antifebrin, antipyrin, or phenacetin, we can bring down the temperature, but, with them we bring down the patient too. I never prescribe either of them at any stage of this fever. The chief efficacy of the cold bath is that it is a potent eliminator of the typhoid toxin by the kidneys. It has been abundantly demonstrated that the toxicity of the urine, when injected into animals, is more than doubled after a bath than before it, a fact which is clinically illustrated by the subsidence of the worst nervous symptoms after the patient is returned to bed.

This potent remedy should be used with all the discrimination which all remedies call for in proportion to their potency. It should be begun so soon as the temperature reaches 102.5° F. It is often put off too long, for the earlier its eliminating property is resorted to, the better for the subsequent course. The duration of the bath should be wholly according to the effect. If the temperature drops from one to two degrees while in the bath, the patient should be taken out though he has been in it only five minutes. It should never be allowed to drop to 100° F., for it goes on falling after he is put back to bed. Otherwise, if instead of falling, it tends to go up after he has been in ten minutes, he must be left in it till it begins to fall, thought it may require over half an hour to do so. Severe shivering is not to be paid any attention to, but a good measure to shorten this after the bath is a dram of Hoffman's anodyne in an ounce of camphor water, and in some who show this symptom with every bath, this stimulant may be given just before, as well as after it. The frequency of the baths should be according to the subsequent rise of the temperature, for the bath should be repeated so soon as the thermometer reaches 103° F. Active friction should be kept up during the bath, and in some very nervous patients the water may at first be tepid and then cooled afterward by ice. In private practice, where the patients can afford it, I think very well of the Nauheim salts being added, with their free production of carbonic acid, as it has seemed that the effect is more prolonged than after the ordinary bath.

A few patients cannot take cold baths. The only criterion of this fact is that the pulse remains weaker after the effects of the bath have been recovered from, than before it was taken. In them, a warm bath from 95° to 98° F. may be tried instead, and occasionally it acts as favorably in such cases as the cold bath does in others. If, however, the temperature does not fall after a warm bath, but rises instead, the cold bath should be resumed and pushed fearlessly. I have seen many more bad results from timidity in using cold baths than from excess in their employment.

The only condition which should interrupt the administration of the Brand bath is the supervention of intestinal hemorrhage. This complication is unfortunate chiefly on that account, for I have never seen intestinal hemorrhage directly fatal at Roosevelt. With the first sign of its occurrence, a dose of three pills is at once administered, of the following prescription:

℞ Argent. nitratis	grs. v
Pulv. opii	grs. v
Terebinthinæ resin	3iii
Liq.. kali	3i

M. Div. in pilul. lx.

The object of the turpentine is to prevent the silver salt from being absorbed until the pill is well on its way down the intestine. Sometimes these pills are voided unchanged, in which case they are rubbed up with more licorice powder in the making. I have used these pills for years in the treatment of ulcerative colitis, or ulcers in chronic dysentery, intestinal tuberculosis, etc., with such good effects that I have no doubt that besides checking intestinal hemorrhage in typhoid, they may be of service in preventing perforation. After there have been no signs of hemorrhage in typhoid for thirty-six hours, the baths are resumed again.

In the third and fourth weeks, the patients are often restless from a general aching of the body. This is due to the absorption of the subcutaneous cushion of fat leaving the nerves (which never waste) so exposed to pressure against the bones, as at the sacrum, scapulæ, knees, etc., that intolerable neuralgic pains often results. This aching is markedly relieved, and sleep thereby promoted, by spreading sheepskins with the wool on them, or buffalo robes, on the bed, and then over that a sheet for the patient to lie upon. In all conditions of emaciation, such measures to relieve pressure on nerves should be employed. Rubbing the patient all over with warm lime water liniment, to which Ol. cinnamoni, one dram to the pint, has been added, is very soothing after

the second week; and if well applied to the back twice a day is a good prophylactic against bed sores.

As typhoid fever progresses in its course, about the middle of the second week the symptoms often indicate in which of three directions the chief danger of the patient lies. The first of these is death due mainly to continued hyperpyrexia. The temperature tends to reach a high grade in the mornings, as well as at night, and is not affected, unless it be to be increased, by the cold bath given for fifteen to twenty minutes. Severe nervous symptoms develop, such as active delirium, and if the fever be not broken, general tremors occur. Death, preceded by coma and general cyanosis, ends the scene. It is in these cases that the patient should be dealt with just as we use the ice bath in sunstroke, or in the hyperpyrexia of acute rheumatic fever. I have kept such typhoid patients in an ice bath for 33, 40, 45 and 48 minutes, with full recovery in each case; and unlike the hyperpyrexia of rheumatism, when the fever is once broken, in my experience, its subsequent rises are as easily controlled as in ordinary cases.

The second tendency which should be noted, has for its symptoms an early development of tympanites, with or without diarrhea, with pronounced tremor of the tongue, as well as dryness. The expression of the face is that of settled anxiety, with the corners of the month persistently turned down. In these patients, as already remarked, the brunt of the attack is upon the intestinal tract, and they are more liable than others to hemorrhage, to extensive slow-healing ulcers, to relapses, or to perforation often while they seem convalescing. These patients should have only about one-half the average amount of milk given to them, and in smaller quantities at a time. Five grains of resorcin given in an ounce of sweetened water t.i.d., with the dose of bismuth doubled, and in some cases with the addition of five grains of the sulphocarbonate of soda with each dose of bismuth, is the modification of the ordinary medicinal prescriptions which I follow for such patients, and as above remarked, they should abstain longer than others from taking solid food on the subsidence of the fever.

The third class are the least promising of any, their symptoms being those of severe toxemia and of general prostration from the beginning. The temperature instead of keeping up at a high range may, on the contrary, show a comparatively low average. But the chief features are those of weakness of all functions; the heart remaining feeble, and the effect of baths, whether cold or warm, is plainly not beneficial. Deaths occurs from pure asthenia. I would give such patients twenty drops, four times in the twenty-four hours of the tincture of the chloride of iron, with three grains of quinine each time, and one-sixth of a grain of the calcium sulphide, while the cardiac stimulant of camphor, hypodermically, is to be used constantly.

On the other hand, some patients, especially after a prolonged course, owing to the experience of a relapse, suddenly develop alarming attacks of severe rigors, during which they appear to be actually dying. The temperature rises to 105° F. or more, but after a few hours it drops to 101° F., or even to normal. These rigors are not at all periodical, for they may return any time. If the urine is examined after the attack has subsided, it will be found loaded with immense numbers of the *Bacillus coli*. This disturbance is doubtless due to this mixed infection, and the prognosis is not necessarily fatal, for four out of five of the last examples in my experience got well. The urotropin with sodium benzoate mentioned in connection with nephritis complicating typhoid, should be immediately resorted to.

Lastly, mixed infection causes some patients to remain with febrile symptoms for many weeks subsequent to the usual duration of typhoid fever, even after a relapse. As Prof. Francis Delafield has shown, these patients should not be considered as suffering from typhoid fever then, nor be so treated. He recommends that they be allowed to sit up and to take more liberal diet, whereupon they soon improve in their general symptoms, and their fever leaves them.

23 East Forty-seventh Street.

CLINICAL STUDIES IN BLOOD-PRESSURE AND SHOCK IN TRAUMATIC SURGERY.[1]

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ACCORDING to the bulletin of the Department of Labor, Pittsburg has the highest percentage of deaths from trauma of all the cities in the United States. Scranton is third from the top in this respect. It is probable that the same high percentage of deaths from trauma obtains in all the coal or railway towns in the State. Since in nearly all the deaths from trauma the real cause is shock or its ally, hemorrhage, there are few societies to whom the study of shock, its causes, its prevention and its treatment, are more important to this one.

This study is more important still on account of the fact that the recent observations very strongly assail the value of our previous well-worn methods of treatment. And also because of the recent introduction of instruments of comparative accuracy by which the essential phenomena of shock and the effects of treatment can be more accurately determined. Up to within the last few years it was the unquestioned practice, at least in most hospitals in New York, to treat shock resulting from severe accidents and operations by the most active hypodermic stimulation. Not a few patients during this period were subjected to a hypodermic stimula-

1 Read before the Fifty-fourth Annual Meeting of the Medical Society of Pennsylvania, held at Scranton, September 29, 1904.

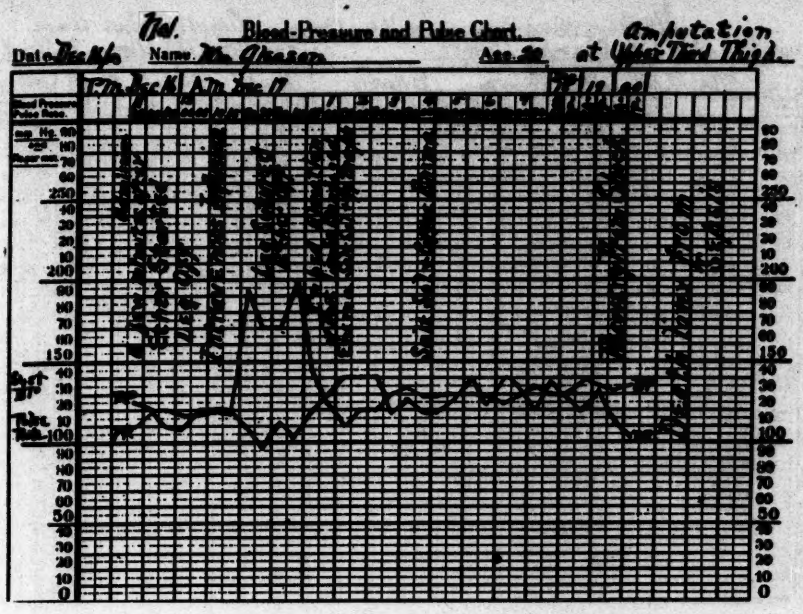

Chart 1.—Thigh caught between bumpers of cars. Admitted two hours later. Hopeless crush at middle of thigh. Immediate amputation of upper third. Intravenous infusion of 2,000 c.c. salt solution with one dram adrenalin (1-1,000). This sustained pressure at high point during operation. Fall afterward but not to an alarming degree. Note gradual improvement after being put to bed with abdomen and extremities bandaged, salt solution enema and morphine. No "stimulating" drugs. Temperature after operation 103.4° F. by rectum. Recovery from shock but death later from sepsis.

tion of some sort every hour and, as Crile well says, synergists, antagonists, and drugs which have no effect at all or are even harmful were combined regardless of their physiological action.

A reaction against, or, at least, a rigid questioning of, these methods was started, in this country at least, principally by Crile's prize essay on "Blood-Pressure in Surgery," appearing in 1903. Crile has conclusively shown that the essential factor in shock is a low blood-pressure, and that the heart is little if any at fault. Crile considers the low blood-pressure entirely due to exhaustion of the vasomotor center in the medulla. He shows that nervous impulses such as handling the abdominal viscera or burning the extremities first cause a rise in blood-pressure. If these stimulating impulses increase in severity or continue over a considerable time, the vasomotor center finally becomes exhausted and a fall in blood-pressure follows. In this exhausted condition he considers it as illogical to attempt a further stimulation by drugs as to add to the cutaneous or visceral insults.

To support this theory, Crile cites some two hundred and fifty experiments on dogs which he first reduced to more or less profound shock and then submitted to various forms of treatment. The results of these experiments show that strychnine and digitalin increase the blood-pressure only in mild grades of shock. In deep grades they would seem to be useless. Saline infusions and adrenalin were of doubtful effect and alcohol and the nitrite group were harmful.

The vasomotor centers then being beyond the aid of the ordinary stimulating drugs, Crile places his sole reliance in combating the low pressure on supporting the peripheral circulation. This he accomplishes to a very remarkable degree by means of a pneumatic suit which can be inflated so as to exert an equable pressure over the whole body or any chosen part. The same result can be brought about though less efficiently by elevating the foot of the bed and bandaging the extremities and the abdomen.

Since adrenalin acts locally as a powerful stimulant to the muscle fibers of the peripheral vessels, it was employed in the treatment of shock with great hopes of its value. Its clinical place, Crile and others consider, is yet to be determined.

While fully acknowledging the great importance of Crile's work, one must remember that the great volume of evidence is drawn from laboratory experiments. Before clinical surgery can accept these teachings and lay aside measures which for years competent clinical observers have considered of value, it will be necessary to submit these ideas to rigid scrutiny at the operating table and bedside.

It is fortunate that the introduction of sphygmomanometers of the Riva Rocci type has given to clinical surgery instruments of sufficient accuracy to observe closely the phenomena of shock

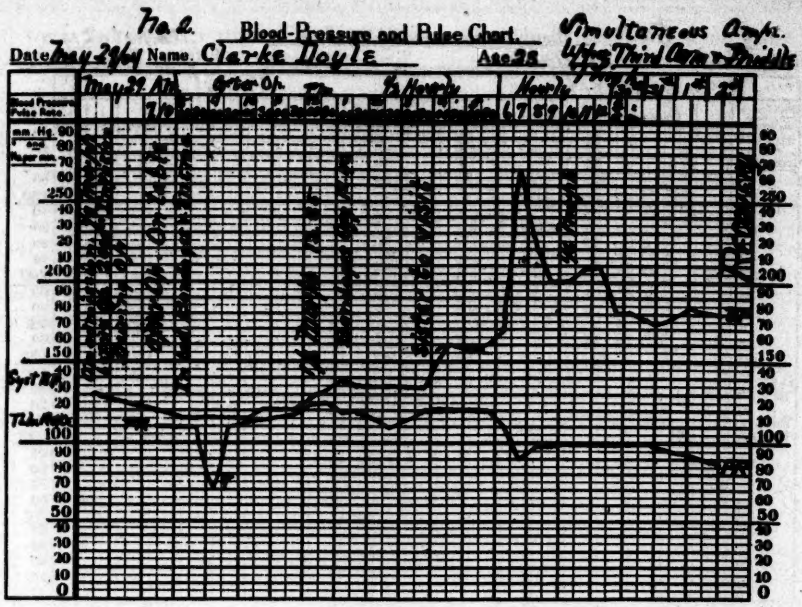

Chart 2.—(Case referred to in text). Run over by train about midnight. Was not seen and lay at side of track for three hours. Admitted five hours after accident. No tourniquets or medical attention before admission. Profuse hemorrhage. Upper arm crushed at middle and thigh just above knee. Immediate simultaneous amputations. Fair pressure on admission. Intravenous infusion of salt solution prevented marked fall during or after operation. Temperature after operation 101.2° F. by rectum. Gradual satisfactory recovery after very severe injury without "stimulating" drugs. Note rise in pressure after each injection of morphine and after sister's visit. Note high pressure as reaction is complete.

and the influence of various therapeutic procedures.

In applying laboratory results to clinical work, it must be remembered that, clinically, hemorrhage is nearly always a factor in causing the depressed state, and also that in contradistinction to comparatively brief laboratory experiments we have in the depression after severe trauma a condition lasting many hours. It is very probable therefore that other vital forces besides the vasomotor centers after a time take part in this depression and require support even if they were not at fault at first.

Moreover, the physiologists are not at unity in exempting the heart from participation in shock. Howell, writing in Vaughn's Festschrift, considers that there are two kinds of shock, a cardiac and a vasomotor form apparently agree with those of Crile but he considers that this form is always accompanied by the cardiac variety. (For probable example of the cardiac shock, see Chart 8.)

However the question of drug treatment may turn out, there are two very important facts in regard to shock which the work of Crile and others has demonstrated. These are: (1) The cause of shock is overwhelmingly irritating nerve impulses of some sort, and (2) the important condition to combat is the low blood-pressure. On these facts the question of treatment is based.

The first attention, therefore, should naturally be given to removing or diminishing the causative nerve impulses. For this reason morphine is now to be considered the most important drug in shock. Crile's work shows that animals receiving morphine before anesthetization are more resistant to artificial shock. Clinical experience also bears this out. In our own accident room the routine injection of strychnine into a patient as soon as admitted has now practically given place to an almost equally routine injection of morphine. Even during recovery morphine seems to be a most important drug. The sensory impulses are still kept blunted and even an increase in pressure may follow morphine as some of the charts show.

To remove the nerve impulses after trauma an immediate repair of the injury, if at all feasible, is very important. For this reason our own view is strongly in favor of primary amputations in limbs hopelessly mangled. Leaving a mangled, oozing limb with crushed and exposed nerves in the hope that delay will give a more favorable opportunity for intervention will, in many cases, by allowing the cause continually to act, only drive the patient into a condition beyond all hope. A well-covered stump with oozing checked, on the other hand, will give a patient in whom the cause of shock is stopped and to whom the administration of therapeutic measures will not be like pouring water through a sieve.

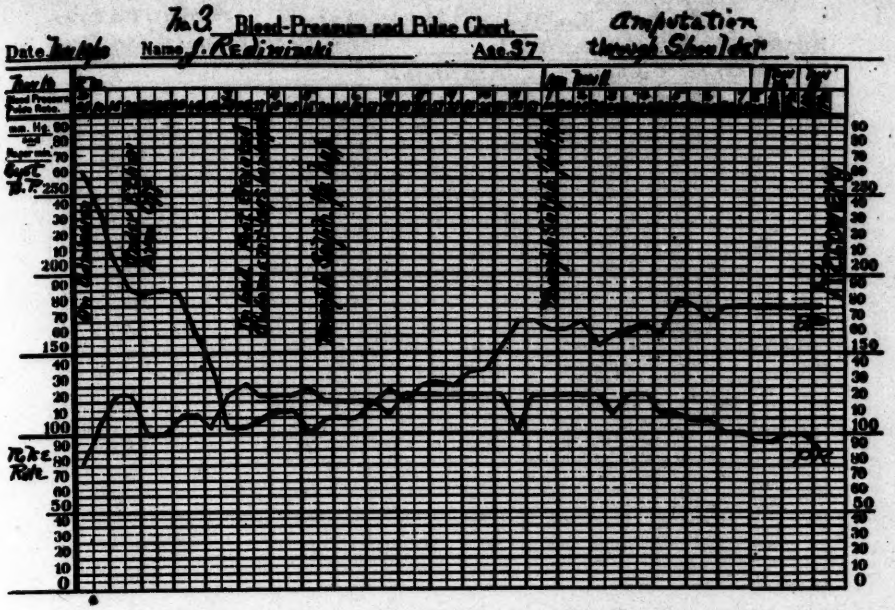

Chart 3.—Arm run over by loaded mine car two hours before admission. Immediate amputation through shoulder. Note high primary pressor period. Slight fall after nerve impulses were blunted by ether. Marked fall after operation. Temperature after operation 103.1° F. by rectum. Note pressor effect of each injection of morphine. A typical case of gradual recovery from severe shock without "stimulating" drugs.

The causative nerve impulses having been as far as possible removed or blunted, the low blood-pressure must next be overcome. It is now a condition in which, as Crile says, the control of the blood-pressure is the control of life itself. The truth of this must, it would seem, be admitted by all who review the literature or who with modern instruments observe for themselves the blood-pressure in shock. Equally convincing is the fact that, to control the blood-pressure the most effective means at hand are the so-called mechanical ones. By this is meant pressure over the dilated peripheral blood-vessels either as noted above by Crile's suit, or lacking this by elevating the foot of the bed and by bandaging the extremities and the abdomen. The bandage to the abdomen by means of a tight Scultetus bandage is especially important as it has been shown that in shock the blood especially collects in the splanchnic area forming the condition which has been called intravenous hemorrhage.

That these mechanical means may be markedly effective even in the most desperate cases, is shown by a case recently in our wards. This was a man twenty-three years old. He had been run over by a train about midnight. The wheels of one or more trucks passed over the left arm midway between the shoulder and elbow and over the left leg just above the knee. The bones in each limb were ground into fragments and the soft parts were terribly crushed. The man was not seen by the crew of the train which ran over him and in the above condition he lay at the side of the track in the cold of early morning for three hours. At the end of this time he was seen by a passing freight and brought to the hospital, a distance of thirty miles. He arrived at the hospital about five and one-half hours after the accident, having had no medical aid, not even a tourniquet, and having as noted, spent three hours lying beside the track. That the condition of shock under these circumstances was severe will be admitted. An immediate simultaneous amputation was performed. The arm had to be taken off just below the shoulder and the thigh at its middle. A hypodermic of one quarter of a grain of morphine was given before the operation and a 2,000 c.c. intravenous infusion during the operation. The operation did not add to the shock. On being returned to bed the remaining extremities and the abdomen were bandaged and the foot of the bed elevated. The gradual progress to recovery is shown in Chart 2. No hypodermic "stimulation" was used.

While the value of the previous methods of drug stimulation is justly questioned, our own clinical experience in regard to the value of intravenous infusions of salt solution is far too favorable to allow our reliance on it to be at all shaken by any evidence yet adduced. In spite of the theoretical and experimental evidence to the contrary, we have seen so many cases in our wards which were almost pulseless and apparently on the verge of death come up under

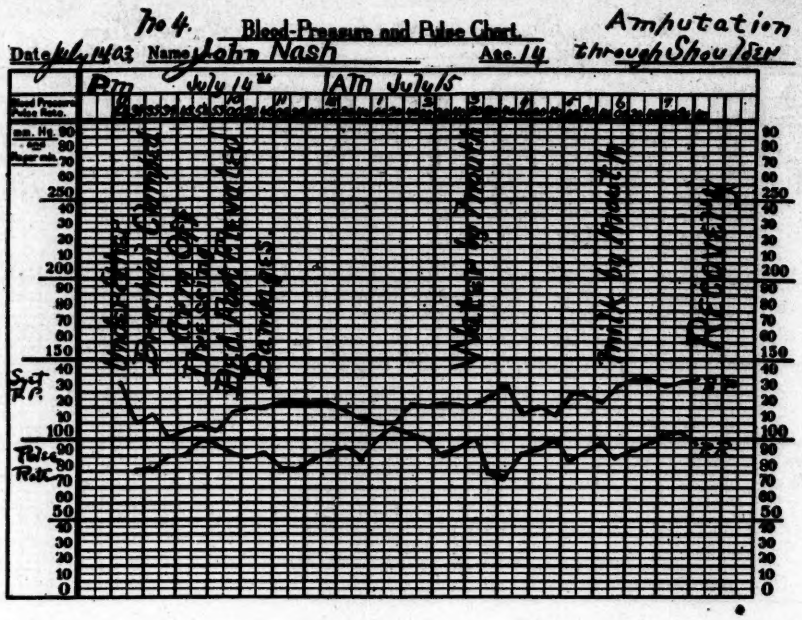

Chart 4.—Arm run over by mine cars two and one-half hours before admission. Immediate amputation through shoulder. Fall of 35 mm. during operation. Temperature after operation, 99° F. by mouth. Note rise after being put to bed with elevation of foot and bandage of extremities. Note pressor effect of water and milk by mouth. Gradual progress to recovery without "stimulating" drugs.

an infusion and never again sink to a disquieting condition that we consider its practical value in certain cases demonstrated beyond assault. A nine-tenths per cent. salt solution should be used instead of the old six-tenths per cent. Matthews' formula, here given, is probably better still:

℞ Sodium chloride	.09
Potassium chloride	.03
Calcium chloride	.02
Water	100.00

From our own observations we are not yet able to say whether or not adrenalin increases the efficiency of a salt solution infusion. We have used it a number of times in the proportion of one dram of the 1/1,000 solution to 2,000 c.c. of the nine-tenths per cent. salt solution.

In regard to the value of digitalin and strychnine in practice, we are still somewhat uncertain. Some of our blood-pressure determinations do seem to show that they have a real value. Cook and Briggs' work also indicates that they have. If we accept Howell's idea concerning the part played by the heart in shock, they would theoretically have a place. Clinically, too, we have no way of telling whether the vasomotor centers are really exhausted beyond improvement or whether their depression is only partial and temporary and whether they would not be better for medicinal treatment. Crile's experiments show that strychnine and digitalin do exert a favorable influence in shock of mild grades, and it is very possible that in severe cases, after the peripheral circulation has been mechanically supported, we create this mild condition in which these drugs are useful. It is now chiefly this phase of the question, *i.e.*, what, if any, is the value of digitalin and strychnine that now requires the most careful and exhaustive clinical study aided by the sphygmomanometer. (It may be said in regard to these two drugs that they are seldom given in large enough doses when their use is considered necessary. If one expects to get an effect in severe cases, the dose of each should be one-tenth grain, its repetition to be guided by its effect on the pressure. We began using digitalin in this dose about four years ago and often obstained what we thought were excellent clinical results.)

That alcohol is of real value in shock can now be denied from all standpoints. Personally, however, we are far from banishing it from use in surgical conditons. We frequently see people who have recovered from the primary shock and may have a normal pressure, but still on the second, third or fourth day are far from being in a satisfactory condition, the event being still in doubt. The digestive organs, like all vital forces, seem below par, and in this general failure the ordinary foodstuffs are not absorbed and the body lacks fuel. In this condition alcohol offers itself as a very diffusible food of high potential energy, which is easily absorbed and furnishes the body with the fuel it needs to carry on its struggle. The condition is allied to that of asthenic pneumonias and typhoids and the exhaustive bronchopneumonias of children where alcohol is used by clinicians the world over.

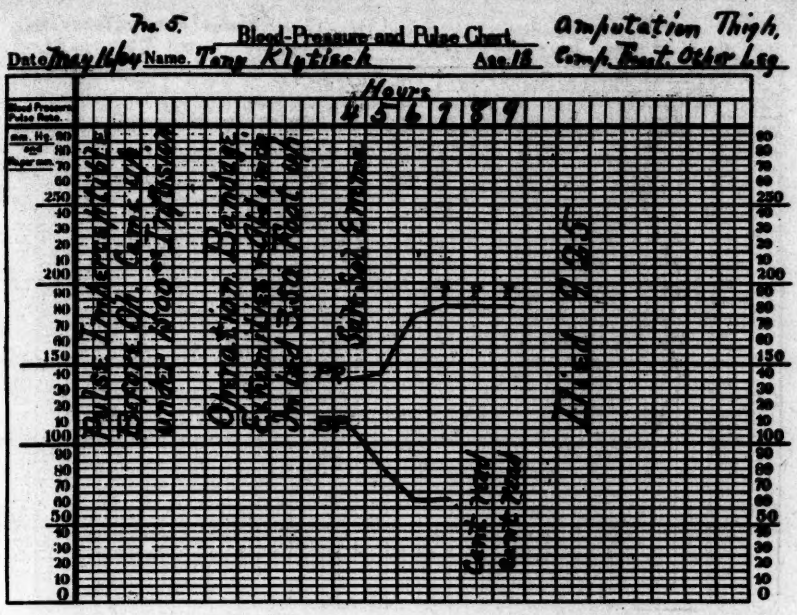
No. 5.
Blood-Pressure and Pulse Chart.
Amputation Thigh,
Date May 16 1904 Name. Tony Klytisch Age. 18
Comp. Fract. Other Leg
Hours
4 5 6 7 8 9

Chart 5.—Boy run over by cars in mine about two and one-half hours before admission. Pulseless and nearly dead on admission. Pulse brought up temporarily by infusion. Rapid sinking of general condition and fall of pressure after operation. Temperature two hours before death 103.4° F. by mouth. A typical death from shock.

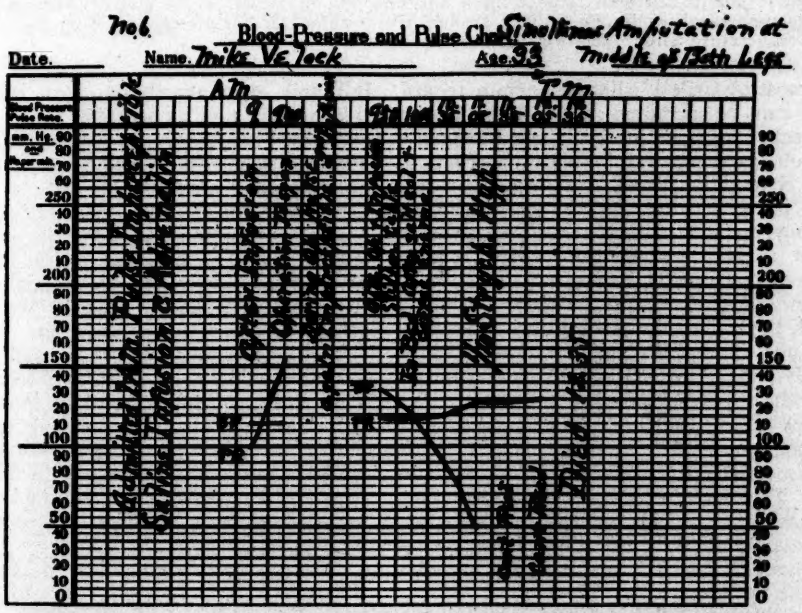

Chart 6.—Both legs run over by train 60 miles from hospital. Admitted eight hours later. No medical attention. No tourniquets. Great hemorrhage. Hopeless case from start. On admission barely conscious, pulse imperceptible. Infusion of 2,000 c.c. salt solution, with one dram adrenalin ($^{1}/_{1,000}$) brought pressure up to 115 mm. at which it was sustained for nearly an hour. During operation pulse again imperceptible. A second infusion brought it up to 135 mm., from which it rapidly fell. No response from any measure in dying patient.

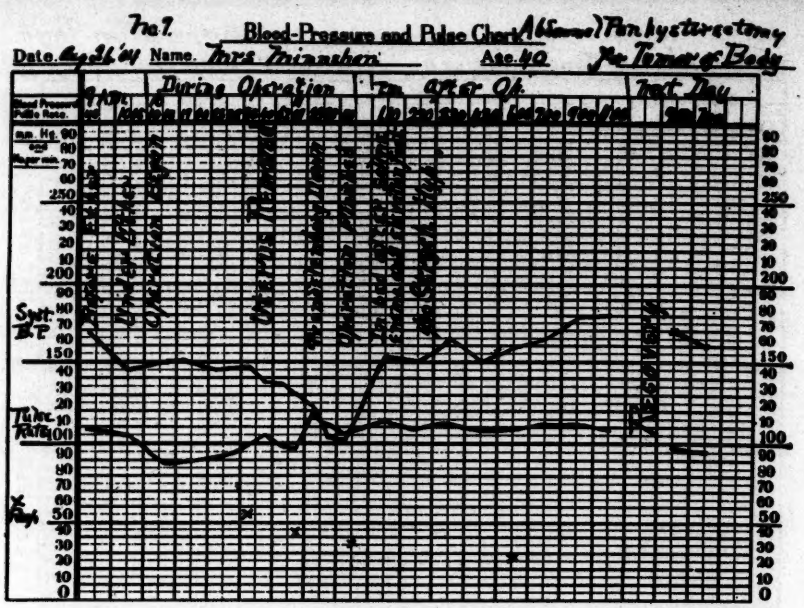

Chart 7.—Abdominal panhysterectomy for fibroids. Removal of both tubes and ovaries. Much debilitated from repeated hemorrhages. Before operation red cells 3,200,000, hemoglobin 40 per cent. High pressure on first reading in etherizing room from excitement. Reading after ether is probably normal. Gradual fall in pressure during long operation with moderate hemorrhage. Marked increase in fall after Trendelenburg position is let down. Condition at end of operation is serious. Marked rise in pressure after patient is put in bed with foot elevated and one pint of saline enema given. Temporary rise of 15 mm. after strychnine hypodermic. Later gradual rise without further attention. High reading on full recovery. Temperature after operation 97.6° F. by mouth.

While most of Crile's brilliant work in regard to shock can be accepted unconditionally, in actual practice a few vitally important points must be submitted to careful clinical observation. The final chapter in regard to treatment is still far from being written, and it must wait till observations on the human being after severe trauma or surgical operation permit a reliable consensus of opinion.

My own views, after carefully observing many cases with the aid of the Riva Rocci apparatus, are still unformed and hazy on many points. Tentatively, I have formed as a temporary working basis the following conclusions:

1. There is one drug, morphine, of which the value is unquestionable.

2. The most effective treatment is the mechanical one. This suffices in many desperate cases. After it has been carefully applied strychnine and digitalin may possibly be of value. These drugs alone without mechanical treatment are probably of no value in severe cases.

3. Nitroglycerin, atropine and alcohol are inert or harmful, though alcohol is valuable in after-conditions.

4. Intravenous infusions are of real and great value. The efficiency of adrenalin in addition is doubtful.

(The ordinary detailed attention to avoidance of exposure, the application of artificial heat, full and even anesthesia, with ether and not chloroform, rapid operative work without unnecessary handling, the copious administration of water by mouth or rectum, etc., have the same great value as always.)

Appended are charts illustrative of various phases of this subject. The legend with each one is probably sufficient explanation. Charts 11 and 12 have nothing especial to do with shock but are included to show the value of the sphygmomanometer in diagnosis.

These determinations were all taken with Cook's modifications of Riva Rocci's apparatus. The armlet is 5 cm. wide. This apparatus usually gives readings about 20 mm. higher than actual but it is sufficiently accurate for comparative work. Our own experience with this instrument with active, hard-working railroad men and miners would show that for them about 150 mm. is an average normal reading.

A large part of the data is due to the enthusiasm of various generations of internes who have frequently continued these readings all night.

It may be added that the use of the instrument has been of the greatest practical value in the care of severe traumatic cases and there is no way in which the operator can so easily keep informed as to the true condition of the patient, both on the table and after, as by the use of this

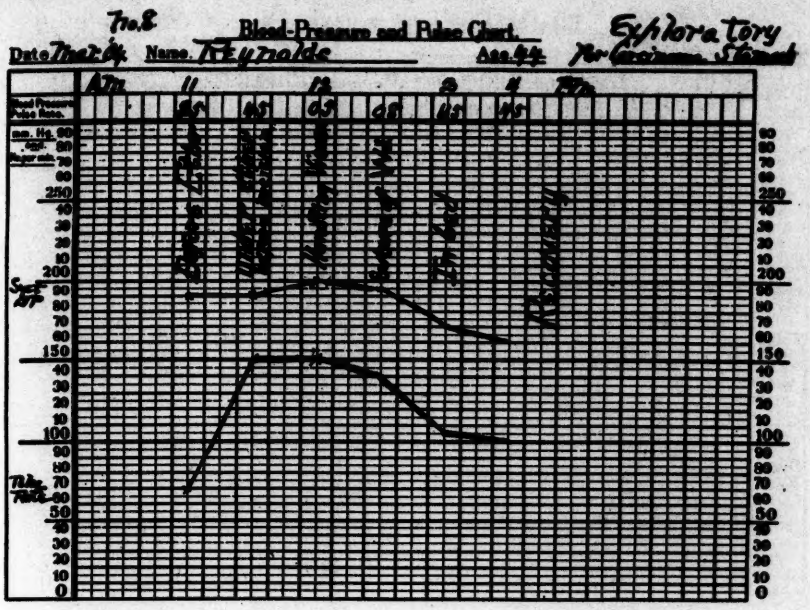

Chart 8.—Operation for carcinoma of stomach. Condition found inoperable and interference stopped. First reading in etherizing room is high from excitement. Note increase in pressure on manipulation of viscera during exploration. Important point in this chart is the marked increase in pulse rate without change in pressure. This is an example of Howell's cardiac shock. Recovery from operation. Death several weeks later from carcinoma.

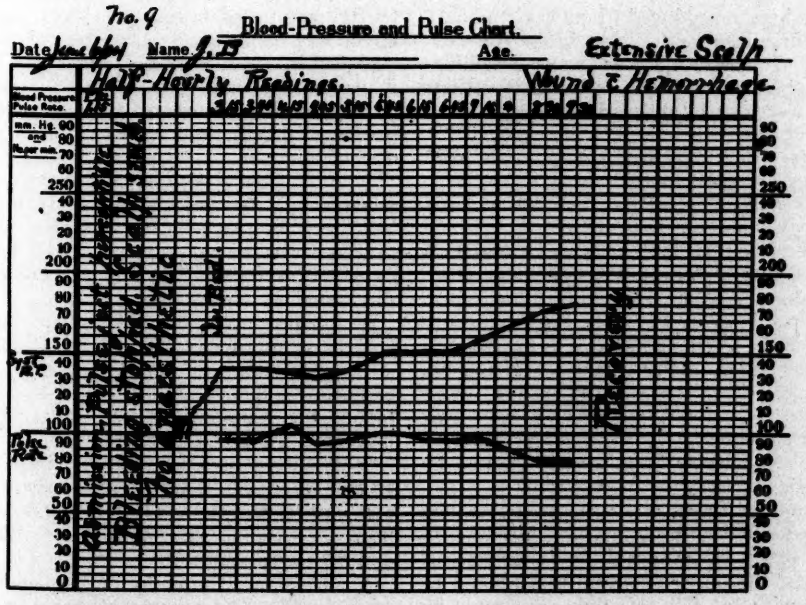

Chart 9.—Case corresponding to Crile's collapse. Extensive scalp wound two hours before admission with profuse hemorrhage. Pulse barely perceptible on admission. Temperature on admission 99° F. by mouth. Scalp sutured in accident ward without anesthetic. Chart shows gradual recovery after patient is put to bed without any treatment at all.

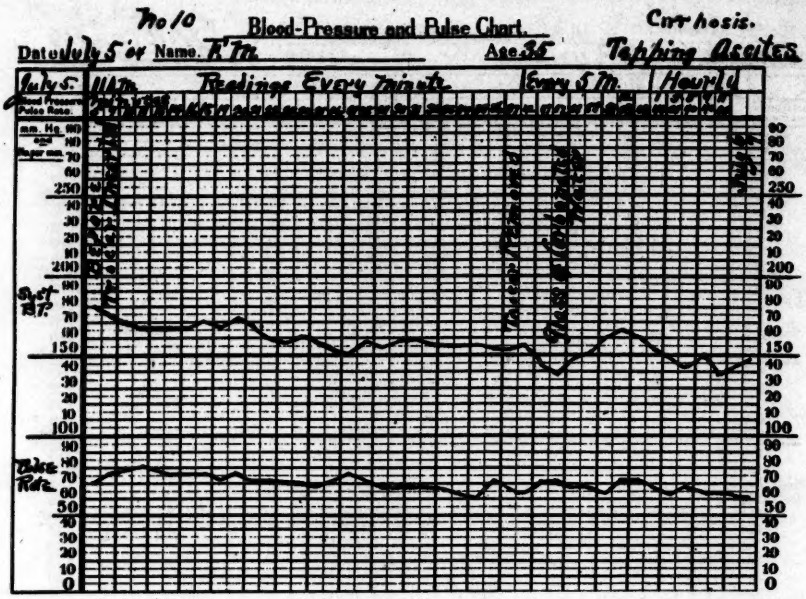

Chart 10.—Blood pressure readings during tapping of an ascites from cirrhosis. Ten quarts removed. High pressure before tapping from intra-abdominal tension. Gradual fall of pressure during tapping with no disturbance of pulse-rate. Note marked rise in pressure after taking a glass of carbonated water. While tapping this man on another occasion a fall of 35 mm. was caused by making him sit up during the tapping.

instrument. It is no longer a laboratory toy but it is now a very important addition to a surgeon's outfit.

The charts here reproduced (Janeway's model) do not of course represent all our recent observations. They are single more or less typical illustrations of phenomena which many observations in our own wards or by others have taught us to accept as true.

The points which we would emphasize from the teachings of these charts are as follows:

1. *The Primary Pressor Period.*—It has been indicated above that the sensory impulses which finally cause shock at first cause a stimulation of the vasomotor centers and a rise in pressure for a certain period before exhaustion supervenes. We not infrequently have cases of severe accidents, which when admitted are in this primary pressor stage. (See Chart 3.) This, we consider, is the ideal stage for operative repair of the injury: *i.e.*, primary amputation, etc. This high primary pressure is generally markedly reduced when the sensory impulses are blunted by full anesthesia. (Also see Chart 3.)

2. *The value of Intravenous Infusions.*—Chart 2 shows that after a preliminary infusion with one-fourth grain of morphine a simultaneous amputation of the upper arm and thigh could be performed with a fall of only 20 mm. in the blood-pressure. Compare this with Chart 3 in which without these preliminaries a fall of over one hundred mm. was caused by the much less severe shoulder amputation and with a fall of 35 mm. in a similar operation in Chart 4. Chart 1 shows a remarkable pressor effect of an intravenous infusion begun during an amputation at a time of falling pressure. The pressor effect was maintained until after the patient was returned to bed. A fall did occur later but it was only temporary. Chart 6 shows a temporary raising of an imperceptible pulse to a pressure of 135 mm. by an infusion during an operation.

3. *Excessive Reaction.*—In many cases even when simple mechanical or no treatment at all has been employed after reaction the blood-pressure reaches an unusually high point. The explanation for this is not yet evident. It is illustrated in Charts 2, 3, 7 and 9.

4. *Cardiac Shock* (Howell).—While this clinical condition is still questionable, Chart 8 is a good example of its possibility. In this exploration which was attended by no loss of blood, the handling of the abdominal viscera increased the pulse rate from 70 to 150 and if this condition had been observed by the finger on the pulse only it would have caused the gravest apprehension. The sphygmomanometer, however, showed an actual rise in the pressure and no alarm was felt.

5. *Morphine, Water by Mouth, and the Visits of Friends.*—The pressor effect of morphine is definitely shown in Chart 2. In Chart 3 it is absent. The pressor effect of water by mouth is shown in Charts 4 and 10. This is due to reflex action, and not to the mechanical effect of

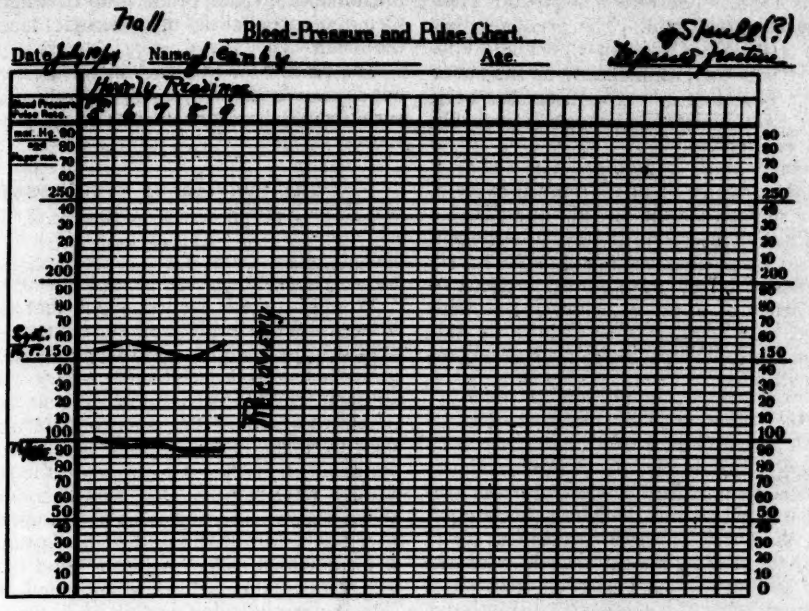

Chart 11.—Showing value of blood pressure determinations in diagnosis. Man fell from top of box car four hours before admission. Four inch scalp wound over frontal area. First attendant had palpated through this and thought there might be a depressed fracture. Wound had been sutured before admission and local examination was unsatisfactory. Cerebral pressure was not considered to be present, and this was corroborated by stationary normal pressure. Uneventful recovery.

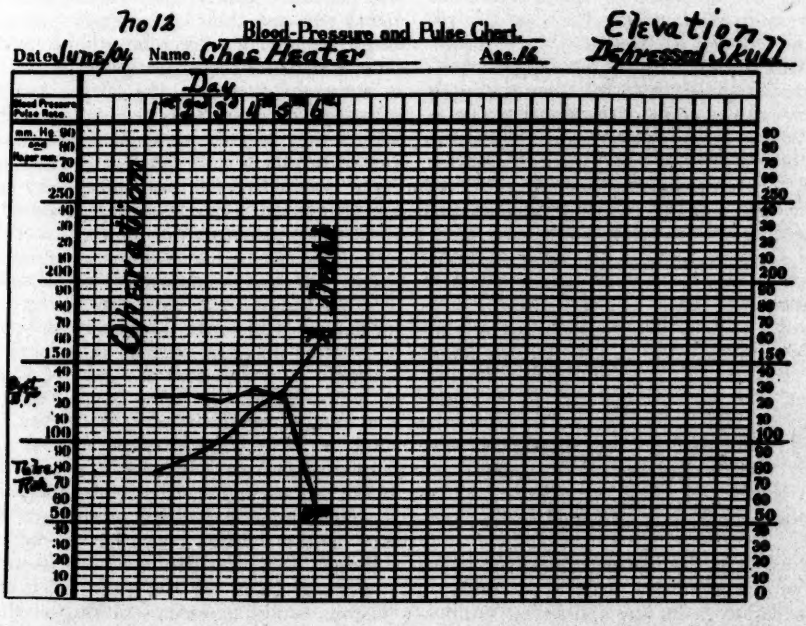

Chart 12.—Value in diagnosis. Fall of roof of mine on head. Open depressed fracture in parietal region with laceration and protrusion of brain tissue. Skull elevated. Daily readings show that there is no cerebral pressure. Marked fall before death. Death from injury to brain substance. Temperature at time of death 108° F. by rectum.

the water absorbed. The effect is greater after carbonated water than plain. The pressor effect of a visit of a friend is seen in Chart 2. This particular case is not very conclusive as the curve is ascending. That this is a true effect has been shown by the Boston Committee, and is probably from mental excitement.

6. *Strychnine and Digitalin.*—The charts, which it has been convenient to reproduce here, throw only a negative light on this question, as they show how much can be done without them in severe cases by mechanical methods. Chart 7 shows a pressor effect of 15 mm. Chart 6 shows an absence of effect in a dying case with a large dose. Our other observations on this point are not yet sufficiently numerous and complete to be instructive.

NOTE ON THE TEMPERATURE CONDITIONS IN SHOCK.

At the suggestion of Dr. B. Farquhar Curtis the cases herewith reported were further reviewed with regard to the temperature changes. Kinnaman (*Annals of Surgery*, December, 1903) has made an elaborate laboratory study of the temperature in dogs which had been reduced to shock and found that the temperature is always reduced, and that the amount to which it is lowered is fairly proportional to the degree of shock as measured by blood-pressure.

Kinnaman's experimental data is so complete that little doubt can remain as to the truth of his deductions in experimental animals. Clinically, however, the behavior of the temperature in shock is very inconstant. Sometimes it is reduced and sometimes it is elevated. For instance, in Case V, which was a death in a typical condition of shock about eight hours after the boy's legs were both run over by a train, the temperature shortly before death was 103.4° F. by mouth. In Case I, on return to bed after amputation of the thigh the temperature was 103.4° F. by rectum. The next evening when the shock had been recovered from the temperature was 99.8° F. In Case II, on return to bed after a simultaneous amputation of the thigh and upper arm the temperature was 101.2° F. by rectum. This was the man who had lain beside the railroad track from midnight till 3 A.M. before being found. He had ample opportunity for the loss of body heat. In the two shoulder-joint amputations, both of which healed per primam, the temperatures immediately after operation were 103.1° F. by rectum and 99° F. by mouth, respectively. Neither of these two cases had infusions, though the first three noted in this connection did.

The only case in this series which showed a reduction of temperature was Case VII, in which, immediately after an abdominal panhysterectomy, the temperature was 97.6° F. by mouth. At noon the next day, when the shock had entirely disappeared, it was 98.6° F.

The high temperature in Case XII was due presumably to the brain lesion, either a septic meningo-encephalitis or a simple laceration of the brain.

The reason for this varying of the temperature conditions in clinical cases, as well as its departure from laboratory results is as yet very obscure.

THE PURPOSE OF EYEGLASSES.

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It might seem at first sight that the discussion of such a topic was superfluous, yet every oculist must have noticed that the majority of his patients have the most rudimentary ideas on the subject, while it is the most difficult thing imaginable to get even the postgraduate medical student to abandon the popular belief that the only function of glasses is to improve the sight. The family physician is also firmly convinced that when vision is keen glasses are unnecessary, and ascribes manifest discomfort to "granular lids," a term which, like "malaria" and "uric acid," suggests to the victim patience and resignation. The refracting optician is also deeply imbued with the same idea and generally adds to it the still more harmful belief that any glass which will improve the sight should be sold the patient in as expensive a frame as possible.

It goes without saying that improvement of vision is one of the ends of properly fitted glasses; but probably half of the prescriptions given patients who use their eyes steadily are not for the improvement of vision but the relief of strain. The first often requires very little skill, and it is a notorious fact that the laity select their own glasses with the same cheerful confidence with which they buy their patent medicines. The relief of headache and reflex disorders on the other hand is a matter often involving very complicated problems and a much higher grade of skill.

Many persons are born into the world with eyes the capacity of which for receiving visual impressions is perfect, but through optical defects of the eye do not have a clear image formed on the retina. For instance the hyperopic or far-sighted individual has an eyeball that is shorter than normal, in which case the rays of light come to a focus behind his retina instead of upon it and the image instead of being sharp and clear is like that on the ground glass of an ill-focussed camera—dull and indistinct and lacking detail. And just as in the camera the focus is adjusted by changing the position or strength of the lens, so in the human eye the accommodation is brought into play, the lens becomes more convex, the rays focus on the right spot and distinct vision results at once. As long as this compensation takes place without any appreciable effort the patient feels no need of any artificial help. But it must be remembered that every act of accommodation requires an expenditure of mus-

cular energy and that what is mere play to one person may be exhaustive labor to another. A young person may have a short eyeball and with the vigorous accommodation of youth have perfect vision, but as age increases and the elasticity of his lens diminishes his need of a glass becomes more and more imperative. Some eyes are so hyperopic that even in the vigor of youth the accommodation is not sufficient to secure clear vision, and a convex glass is needed from the first. Even with normal eyes, after the age of forty years the accommodation has diminished so much that the patient though still able to see distant objects as well as ever is no longer able to see small objects close at hand and has passed into the state of presbyopia or old sight. These are almost the only patients who require glasses because they cannot see well, and fitting them is often a matter of patience rather than of skill.

A much larger class is composed of people who see perfectly and yet ought to wear glasses to relieve them of troubles which they do not ascribe to their eyes at all. Suppose for instance the case of a young and healthy patient with a moderate hyperopia; with his eyes completely at rest, images of distant objects are focussed behind his retina, but by a moderate and unconscious use of his ciliary muscle his vision may be even a little better than normal and he often takes pride in the keenness of his sight. But when an evening at the theater calls for several hours continuous action of his accommodation his eyes get very tired and he not infrequently pays for his overwork with a raging headache. As he gets along into middle life and his accommodation gets weaker and weaker the keenness of his vision can be depended on for shorter and shorter periods and he finally graduates into the class of those who cannot see even distant objects without glasses. If this tiring of the ciliary muscle is true for distant objects it is even more certain when near vision brings its additional strain, and the man whose shooting is the envy of his friends may not be able to finish the first chapter of a novel without a headache.

We often see children with well-marked squint which the fond parents ascribe to a fit or a fright or some special accident, since the eyes were perfectly straight at birth. Such children often have perfect vision in each eye but in order to get this perfect vision have to strain the accommodation. They find it easier to make this increased effort by turning the eyes in, since there is a normal relation between accommodation and convergence. Inasmuch as eyes that cross cannot both see the same object they look with one eye and disregard what they see with the other, and if it happens that both eyes are equally good the eye which first catches sight of the object fixes while the other squints. Such children therefore squint sometimes with one eye and again with the other. When they are fitted with suitable glasses they can see without straining the accommodation and therefore they no longer find it necessary to squint. It is common enough to see children whose eyes are perfectly straight while they wear their glasses and which instantly cross when they are taken off. It is less common in adults. If glasses are not worn they begin gradually to use one eye in preference to the other, the squint becomes a fixed one and the squinting eye from lack of use may loose its keenness to a large degree. At the same time the muscle which turns the eye in becomes hypertrophied from overuse and the squint is present even when the eye is completely at rest. Such cases have got beyond relief from glasses alone, since the eye has become so much poorer than its fellow that it makes no instinctive effort at fusion and even if it did the muscle which should keep it straight has no longer the requisite power.

In the myopic or near sighted person the eye instead of being too short is too long, and the rays of light are focussed in front of the retina, the image being correspondingly indistinct. In this case vision is best when the accommodation is completely relaxed. But even this will not cause the focus to fall on the retina and myopic patients always have defective vision at a distance though they can obviate this difficulty by bringing objects nearer to them. Thus it often happens that the patient needs a glass for use on the street or at the theater while he can read his book or paper without. Glasses are generally given in myopia therefore to aid vision rather than to relieve strain though this is not always the case. Inasmuch as the myope sees things at a distance best with his ciliary muscle relaxed, it is from simple lack of use very much smaller and weaker than that of the far sighted patient. When he picks out his own glass or has it fitted to him by the trial case alone he invariably selects a glass which overcorrects his error since this allows him to exercise his ciliary muscle somewhat and gives him splendid vision for a time. But unfortunately this muscle from lack of use is small, gets easily tired and headache results. As a rule the ciliary muscle eventually becomes stronger from the exercise and the headache disappears. In a respectable minority however the muscle becomes cramped so that the focus is again in front of the retina and the patient again ceases to see clearly till a still greater overcorrection is given. This vicious circle eventually gets the patient into a condition where the eyes are not only very painful but for the time absolutely useless, and it often takes weeks of rest and care to rid the ciliary muscle of this tendency to cramp when put to any use. This same weakness often makes any unusual near work more tiresome to the myope than to his hyperopic brother. Still another factor is present in very high degrees of myopia in which the patient has to hold his book or work within a few inches of the eyes which have to converge abnormally to fix on the same object. This may not only cause great discomfort but eventually lead to changes in the balance of the ocular muscles. In myopia, then, it fol-

lows that glasses are to be ordered very carefully and that the glass that gives the patient the best vision is not by any means the best for him to wear.

The subject of astigmatism is much more complicated. In the astigmatic eye the refracting media are so disposed that rays of light are not refracted alike in different meridians and consequently do not come to a focus at the same spot. Just how the eye adjusts itself to conditions of this sort we do not know, but in low degrees of hyperopic astigmatism distant vision may be normal and near vision painless. The correction may be made by changing the shape of the lens through an uneven action of the ciliary muscle, or perhaps by tilting the lens slightly in its fossa, but in either case it involves extra work for the accommodation, and work which is all the more trying, because it is unevenly distributed among the fibres. Just as in simple hyperopia, when the accommodation is strong, the patient may be unconscious of any ill effect, and may have good vision, but he is liable in an increased degree to all the disabilities of hyperopia, the difficulty increasing progressively as the work is continuous and nearer to the eye. In hyperopic astigmatism of low degree, therefore, glasses are prescribed to relieve strain, while in the high degrees, which are beyond the powers of the accommodation, they not only accomplish this, but improve vision.

In myopic astigmatism distant vision is always impaired, since it is not corrected by even the most complete relaxation of the ciliary muscle and by the same token it is painless, though the reverse is often true of near vision. The patient brings the object near enough to get a clear focus in his most myopic meridian, and then focusses the other meridian by unevenly straining the accommodation, just as though he were hyperopic and with the same result. In myopic and mixed astigmatism, then, glasses serve to improve vision at a distance and to relieve the strain of near work.

Without going further into the subject, enough has been said to justify these conclusions.

1. That improvement of sight is only one function of glasses.

2. That relief of eyestrain is fully as important.

3. That eyestrain is often responsible for headache and other reflex nerve phenomena.

4. That one may have perfect vision and still be subject to eyestrain.

5. That small errors of refraction often cause more strain than large ones, since there is a more constant effort to overcome them.

6. That strain can generally be relieved by properly fitted glasses.

7. That glasses which give the best vision may simply increase the strain, and that therefore the patient cannot safely select his own glasses; and that, as he will not buy of an optician glasses which do not improve vision, he very seldom gets the correct glass and therefore fails of relief.

THE TREATMENT OF CHRONIC EMPYEMA OF THE ANTRUM, BOTH SIMPLE AND WHEN COMBINED WITH EMPYEMA OF THE ETHMOID AND SPHENOID.[1]

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I HAVE chosen to consider the treatment of chronic empyema of the antrum under these two heads because in my experience, in fully 40 per cent. of all cases of antral disease, the disease process is limited to the antrum alone, while in the remaining 60 per cent. a favorite combination is with disease of the ethmoid and sphenoid. In such cases the treatment of the antrum includes the treatment of the other cavities affected.

The patient presenting himself suffering from disease of the nasal accessory sinuses exhibits symptoms not only of a local, but also of a general character. The physician realizes that the sinus disease has been the cause of the general symptoms, and that relief of the local condition will have a beneficial effect on the general health. He should also realize that attention to the general health will assist materially in hastening the improvement of the local disease. A course of tonic treatment and personal hygiene will sometimes yield gratifying results in cases previously obstinate.

In considering the local treatment of antral empyema, one should remember that the disease is essentially one of extension. It is exceedingly doubtful if empyema ever originates in the antrum itself. It is much more logical to believe, and clinical evidence and pathological findings bear out the supposition, that empyema is a result of some disease process previously existing.

There has been, I think, a line too sharply drawn between the so-called conservative and radical treatment of accessory sinus disease. Some operators make the mistake of adhering too closely to conservative methods, while others hasten on too rapidly to radical measures, before they have exhausted other resources at their command. There is, to my mind, a general scheme for the treatment not only of empyema of the antrum, but also of disease of the other accessory sinuses, a combination of radical and conservative measures, careful attention to the details of which offers better results than adherence either to one or to the other.

The first step in the successful treatment of empyema of the antrum is to learn definitely the exciting cause. Examination of considerable numbers of cases teaches the observer that nearly all cases of empyema of the antrum arise from one of two causes; that is, they arise either by extension of disease from the nasal cavity or they come from a carious tooth. Cases of syphilis, tuberculosis and malignant growth are, of course, excepted.

[1] Read before the Wayne County Medical Society, Detroit, Mich., January 23, 1905.

To consider first the treatment of the second class.—Naturally the first step to take is to remove completely not only the diseased tooth but also the carious bone in its neighborhood. This is easily done with a pair of dental extracting forceps, and a sharp curette. From this point on the treatment should be the same as if the disease had arisen from intranasal causes.

Many operators treat such a condition by boring through the alveolar process in the cavity previously occupied by a tooth. The opening is made large to admit either a wick of gauze or a drainage tube. Through this opening irrigation of the antrum is carried on. Such a procedure is, to my mind, generally only a waste of time. It is applicable to those cases only in which the antrum alone is diseased, and must be considered insufficient as soon as it is learned that other cavities are affected. Then, too, any communication between the antrum, whose resistance against additional infection is already lowered by disease, and the mouth cavity the secretions of which are laden with pathogenic bacteria of all kinds and degrees of virulence, is certainly to be deprecated. I have under treatment at present a patient with a most foul-smelling empyema whose antrum, previously healthy, was infected through such an opening made by extracting a tooth.

After a certain time the operator is confronted by the fact that he must either insert an obturator to maintain a permanent opening or he must allow the wound to close. If he choose the former, he forces the patient not only to wear a foreign body in his mouth for the rest of his life, but also to extend the daily toilet of his teeth to his accessory sinuses. If he choose the latter he may fairly expect a recurrence. By this method careful control is impossible and success is doubtful. Cases do clear up, but they are ones that would have yielded to other and more scientific methods. Statistics of several large throat clinics show a surprisingly large percentage of failures in cases treated in this way, not only as to complete success, but also in keeping the patient comfortable and free from pain. I have had a number of patients who had been treated both by this and by intranasal methods, each of whom has told me that he preferred infinitely the latter. Not only is the former more painful, but the continual draining of pus into the mouth has a bad effect upon his health, his spirits and his mental attitude toward life.

Another method of treating empyema, and one that appeals to me much more strongly, is the intranasal, to the successful use of which belongs not only treatment of the accessory sinus, but also the treatment of the entire nose and nasopharynx. In this connection I hope I may be pardoned if I quote to some extent from an article which I read some time ago before the American Laryngological, Rhinological and Otological Society. Careful rhinoscopic examination of empyema cases impresses one with the fact that in such cases pathological nasal conditions of importance, such as hypertrophies, polypoid posterior ends, spurs and adenoids are almost always to be found, and it is generally true that permanent results are not secured until they are corrected. It may be interesting in this connection to consider briefly the influence that such pathological conditions have upon empyema, both as etiological factors and as factors to determine the chronicity of the disease.

These hypertrophies, either congenital or arising from external conditions, occupation, mode of life, etc., particularly predispose to influenza, diphtheria, scarlet fever, measles and repeated head colds, which are themselves most important in the causation of empyema. It is continual coughing, sneezing and hacking that loosens the mucous membranes from the nasopharyngeal wall, and predisposes to polypoid degeneration, polyps and to severe infection.

Nasal hypertrophies not only predispose, but also act as direct etiological factors and may be considered to act in one of two ways. A posterior end or a mass of adenoid may become a depot for the formation of pus and so become a continual feeder of infective material, which may easily find its way into any one of the accessory sinuses and so set up an empyema essentially chronic from the start. The condition, then, which is so important in causation is naturally an important factor in determining the chronicity of the disease, for as long as such a source of reinfection exists, treatment of the sinus itself is but of slight value.

Hypertrophies act then as sources of infection and reinfection. They act in another way equally important. That is they prevent free nasal respiration, without securing which one cannot expect to bring his case to a successful termination. This truth, I believe, I am one of the first in this country to advance. The value of free nasal respiration can scarcely be overestimated. Two years ago M. Halle, of Berlin, advanced the theory that the air passing in and out through the nostrils was acted upon as in a chimney, drawing out from the accessory sinuses not only the air, but also any secretion that might be in them. That this theory was founded upon fact I have demonstrated to my own satisfaction upon patients. For I have observed if the natural antral orifice which has previously been occluded be made patent, or if an artificial opening through the middle meatus be made into the antrum, that the antrum will soon be emptied of a certain amount of its fluid pus, and that with the patient in a sitting position. Antra opened radically not infrequently show strings of pus extending out through their ostea into the nose. These and similar observations go to prove that proper nasal respiration is of great assistance in securing free ventilation and drainage of the antrum.

As early as possible, then, in the treatment of antral empyema free nasal respiration should be

established and the pathological conditions which could possibly bear upon the case should be corrected. If the symptoms referable to the antrum permit, this can be accomplished at the first few sittings. For the sooner these two ends are accomplished the sooner one can attack intelligently the seat of disease.

In proceeding to treat the antrum itself one finds it accessible through both the middle and inferior meatuses, through either of which he may enter the sinus. As many successful operators prefer one while others equally successful choose the other it has small worth to discuss at length the various opinions upon the subject. One should, I think, be governed by the anatomical conditions and features of the particular case he is treating. Sometimes the middle meatus is small from above downwards or it is situated on a higher plane than usual. These conditions render it less easily accessible, and make the inferior meatus the one of election. Again the inferior meatus is sometimes found to be on an unusually low plane, even considerably below the floor of the nose. Manifestly in such a case the middle meatus should be chosen. If one chooses to enter the antrum through the middle meatus he must first remove the anterior end of the middle turbinate and probably a good share of the uncinate process. This gives free access to the cavity and has the advantage that it lays bare the ethmoid to further operative interference should it become necessary to attack it.

In general, however, the inferior meatus is the easier of access and is the one usually chosen. Free approach to the lateral wall of the nose should be secured by removing the inferior edge of the inferior turbinate. This is especially true when a part of the after treatment is to be carried out by the patient himself. An opening should then be broken into the antrum by means of a drill or a mallet and chisel. This opening can be enlarged by means of a Cordes double chisel until it is exactly the size desired. I have found the most satisfactory size to be about three-quarter inch by one-half inch. This is quite large enough to allow free ingress to the antrum and, in the majority of cases, to remain permanently open. Care should be exercised in making this opening. Most of the instruments, trocars, drills, etc., splinter the bone badly, leaving the edges of the wound rough and irregular and often forcing pieces of bone into the antrum. The electric drill is not open to these objections and grinds the bone into such small bits that they can easily be washed away. For enlarging the opening a Cordes chisel does very well as it brings away the bone fragments in its grasp.

When once the communication has been established satisfactorily a suitable curved tube is inserted into the antrum and the antrum is vigorously inflated from a compressed air tank, if possible. By this first inflation pus is generally found. Air under considerable pressure is then allowed to pass through the antrum for a minute or so, after which the cavity is thoroughly irrigated and again dried thoroughly with air heated to a temperature as high as can be comfortably borne by the patient. Iodoform powder may then be insufflated. I wish to say a word concerning the instrument through which one irrigates. To be efficient it should possess a curve different from that peculiar to the great majority of instruments used for that purpose. The ordinary Krause trocar and most of its modifications are bent in a curve representing an arc of a circle of about three inches diameter. When such an instrument is inserted into the antrum it passes directly across the cavity. Consequently fluids entering through it are forced across to the lateral wall, fall to the floor and finally without exercising any particular scrubbing action, flow out through the ostium. Fluid entering in this way has but an unsatisfactory cleansing function. A curve much better adapted to the necessities of the case is the one belonging to the instrument suggested by Halle. It is, to be sure, a modification of the Krause trocar but it is a very useful one. When this instrument is inserted into the antrum it lies along the inner wall in such a manner that fluid passing from it is forced round and round the cavity in a rapid current finally passing. out of the sinus through the ostium, emptying it not only of its fluid contents but also of the tough strings of pus often fastened to its walls. That that is not merely theory one can demonstrate by using a Krause and then a Halle trocar. When the pus is tenacious and stringy the latter is generally more successful in removing it than is the former more widely accepted instrument. I lay considerable stress upon drying the antrum thoroughly after the irrigation. It is left in better condition and regeneration of the mucous membrane and formation of scar tissue must be encouraged. After the first few treatments the details of the succeeding ones depend largely upon the course of the disease. It is often necessary to make irrigation a part of the treatment for some considerable time. I think it should be discontinued as soon as the character and quantity of the discharge will allow. It is often wise to omit irrigation for a few days and then to return to it in order to keep the antral condition under control, for it must be remembered that although the antrum sound dry a considerable amount of dry pus may be adherent to its walls, which, of course, must be removed. As soon as irrigation is omitted the treatment consists of careful but vigorous inflation, which to be most efficient must be kept up two or three minutes.

Uncombined antral empyemas generally show immediate and marked improvement under such treatment. If such be not the case, one of two conditions may be suspected. Either the antral disease is combined with disease of some other of the accessory sinuses, from which reinfection is taking place, or the condition in the antrum is one that will not yield to this kind of treatment.

The former supposition should be the one acted upon first, and careful examination should be made of those sinuses most commonly affected, the ethmoid and sphenoid. If the ethmoid is found diseased, or perhaps in order to find out if it is diseased, the anterior half of the middle turbinate and the ethmoidal bulla are removed. This gives access to an ethmoid cell, generally the second, through which others may be reached. In this way the various accessible cells can be examined and somewhat satisfactorily cleaned out through the nose. As Killian has said, his speculum for median rhinoscopy is an invaluable instrument for such examination and operative procedure. I am surprised to find this instrument in such limited use. In operating upon the ethmoid one goes no further than he can see clearly. Above the plane of the attachment of the middle turbinate he should proceed with the greatest care and should never venture in this direction more than a quarter of an inch. By such intranasal methods small ethmoids of typical shape can be fairly well cleaned out. There remain, of course, in a great many cases infraorbital and anterior cells not to be reached in this way. To reach the posterior ethmoid cell necessitates the removal of the rest of the middle turbinate, after which it is open to inspection and treatment. The posterior ethmoid cell, it must be remembered, is subject to great variation in size, position and shape, and may be easily mistaken for the sphenoid. While laboring under the delusion that he is treating the sphenoid, the operator may have cause to wonder at the pus which continually reinfects his field of operation from an unknown source. These two cavities, posterior ethmoid cell and sphenoidal sinus, should, in this connection, not be confounded, as in obstinate empyema of the antrum knowledge of the condition of the latter is important, for in thirty per cent. of all cases it is infected.

Any intranasal operation upon the sphenoid presupposes the correction of any septal deviation obstructing a view of its orifice. However early in the course of treatment, its condition should have been learned. If the orifice is visible this is, of course, simple, as a probe or catheter can be inserted without difficulty. When on account of septal deviation or hypertrophied turbinate, this is impossible, the condition of the sinus can be ascertained by passing a slender canula over the hypertrophies or deviation along the cribriform plate until it reaches the nasopharyngeal wall. A little manipulation enables one to enter the sinus although it be invisible.

If the sphenoid be found diseased, the deviation must be corrected and turbinate removed in order to give free approach to the anterior wall which is to be completely removed. Pus and polyps can then be wiped out. Of course only that part of the sinus immediately opposite the anterior wall can be reached. When the cavity is large, extending as it sometimes does into the wings of the sphenoid bone, one must trust to other means. Here again irrigation is useful. This can be carried on successfully through a cannula or a long Eustachian catheter. A half liter can be used to advantage. After this the cavity is thoroughly dried and a dusting powder insufflated. The sphenoid can in most cases be reached and treated in this way through the nose quite as successfully as by some other route.

If the empyema has not yielded to painstaking treatment of this kind, or even before this, in many cases, one is warranted in undertaking more radical measures. It must now be suspected that the cause of the obstinate character of the disease lies either in the character of the pathological changes in the antrum or in involvement of the infraorbital and anterior ethmoid cells. To reach these more successfully one has to resort to the so-called Luc-Caldwell operation or to some modification of it which gives freer approach to the antrum. In determining the course to be followed it is of the greatest value to know as far as may be the character of the pathological changes with which one has to deal, and in this connection I have found the X-ray of very considerable value. The fluoroscope or better, the plate not infrequently shows exactly the cause of the intractability of the case; for it may reveal the antrum filled with hyperlastic growth or extending into the cavity the hidden root of a tooth, long since covered by mucous membrane and forgotten.

This operation may be performed under general or local anesthesia. A lasting and satisfactory anesthesia may be secured by the use of a one-fourth to one-half per cent. solution of cocaine in a solution of adrenal 1-1000. Two or three drams of this solution injected into the mucous membrane of the alveolar process both inside and out, into the soft tissues of the cheek, and into the lateral wall of the nose causes a sufficient anesthesia for from one to two hours. Being an isotonic solution it is, of course, absorbed slowly. One very satisfactory feature of this method is that it makes the operation almost bloodless. If a general anesthetic is chosen I think ether is to be preferred as one may operate with it under much more shallow anesthesia than would be considered safe with chloroform, which fact allows the patient to retain his throat reflex which is of great value in operations during which a hemorrhage into the throat may be expected. The injection of adrenalin is helpful also when using ether although its action is not so satisfactory as when cocaine is employed. If a general anesthetic is employed it is a good plan to pack a wick of gauze into the angle of the jaw to prevent unnecessary sponging of the throat.

The operation itself includes the total resection of the facial wall of the antrum through an incision in the mucous membrane above the tooth line and extending from the first molar to the first incisor. This enables one thoroughly to remove all new growths and diseased mucous membrane. From the antrum the ethmoid cells not accessible from the nose are reached and curetted. Infra-

orbital and anterior cells are obliterated. If the sphenoid has not been treated through the nose it may now be found by passing through the posterior ethmoid cell. Its treatment is as outlined above. The median wall, that is the body lateral wall of the nose, is more or less completely removed and if desired a flap of mucous membrane corresponding in size to the opening in the bone is made, its base being its anterior extremity. This flap is then turned into the antrum and sewed to the median end of the first incision. This procedure leaves an opening large enough to be permanent through which intranasal treatment can be carried out. The question of closing the wound for primary union is an interesting one and must be decided according to the character and extent of the pathological changes found.

When the mucous membrane is entirely destroyed and its place taken by new growth or granulation tissue, or when bone caries exists one must consider the advisability of leaving it open and the antrum free to inspection. In this case the after treatment is much shortened by the application of skin grafts. These may sometimes be applied at the time of operation, especially if the hemorrhage is slight and if the antrum can be thoroughly cleaned out. A simple way of applying the grafts successfully is to slip them from a solution of normal salt on a thin spatula to the walls of the cavity, where they are tamped firmly in place and covered by one layer of iodoform gauze cut in small pieces. This layer of gauze is allowed to remain indefinitely as it protects the grafts while any attempt to remove them brings the graft away also. As soon as there is evidence that the healing process is progressing satisfactorily, the buccal wound may be sutured and any further treatment carried out through the nose.

The after-treatment is essentially the same as described before. Now that regeneration of mucous membrane and formation of scar tissue are going on satisfactorily irrigation may generally be discontinued and the dry treatment resorted to. That is, the antrum may be kept free from secretion by frequent inflations and insufflations of a dusting powder, with an occasional irrigation to serve as control of its condition.

The duration of the after-treatment varies greatly and depends upon several factors. It is influenced greatly by the size and shape of the cavity, for the larger the sinus and the more irregular and atypical its form, the longer the time required to accomplish its epidermatization. Again the condition of the patient and the rapidity with which he responds to treatment are important. If he is in poor physical condition his convalescence will naturally be longer. It is characteristic of some patients that they refuse to heal while others require only the slightest assistance in order to conquer their disease. Sometimes the formation of exuberant granulations, fibrous septa and pockets of pus give rise to a condition quite as difficult to treat as the previous one. Such cases require reoperation and much careful and prolonged treatment. Again the character of the infection must have a certain influence, although after years of existence the infection is always so mixed that the importance of each different germ is difficult to determine. The character and extent of the pathological change are factors of the greatest importance in this connection, and stand in closer relationship to the time required for the after-treatment than does the duration of the disease, for while it is commonly true that difficulty in hearing is in direct ratio to the duration of the disease, it is by no means always true, but depends rather upon the disease process. Some empyemas of years' standing are cured by a few weeks' treatment, while others of a few months' standing resist all treatment. Again the extent of the after-treatment depends upon the combination with disease of the other accessory sinuses, and is in inverse ratio to the ease with which those cavities are reached. Lastly the duration of the after-treatment depends upon the care with which it is carried out. For this reason it is better that it be in the charge of the physician who can note any change from day to day. At times, however, it is wise to hand it over to the patient himself. He should then be furnished with a suitable curved tube, a rubber syringe, and a Politzer bag; be taught how to insert this to the tube, to syringe and inflate the cavity, and to report at intervals to his physician.

Finally in choosing a method of treating chronic empyema of the antrum one should remember that the disease as a rule causes the patient much pain, discomfort and inconvenience, but in the majority of cases does not imperil his life. The percentage of deaths from untreated empyema of the antrum is comparatively small as metastasis and extension into the brain cavity are rare. Perfect cure in the chronic combined cases is difficult and often impossible to secure even by skilful treatment carefully carried out. Therefore, it is the duty of the physician to select that method of treatment which relieves the patient most easily of his symptoms and to resort to radical methods only after conservative ones have been given a thorough trial.

MEDICAL PROGRESS.

MEDICINE.

The Indiscriminate Use of Cathartics.—The idea is firmly rooted in the lay mind and also in that of many physicians, that any arrested bowel action must be promptly restored by the administration of a cathartic. M. L. Harris (*Jour. Am. Med. Ass'n*, February 25, 1905) comments on the dangers attending this procedure, especially in the presence of acute intestinal conditions, and calls attention to the fact that no patient ever dies simply because his bowels do not move. The danger lies in the condition which produces the obstruction, and the idea of giving a cathartic with the thought of forcing a movement of the bowels is irrational and harmful. Where there is a mechanical obstruction, the increased peristalsis above the seat of the

obstruction simply makes the condition worse and finally leads to fecal vomiting and an increase in the severity of the local pathological lesion, be it intussusceptin, strangulated hernia, peritonitis, etc. Where there is present some acute abdominal condition which cannot be definitely determined, with nausea, vomiting, prostration, etc., no cathartics should be given, as the stomach and intestines absorb very little at this time. The author recommends washing out the stomach with normal salt solution or soda solution, and then to keep it empty, not even giving water. The lower bowel may be emptied with enematas. For the thirst, Harris advises salt solution subcutaneously, 1,000 to 2,000 c.c. in twenty-four hours. It must be understood that this treatment is preliminary and must be supplemented by the proper operative measures as soon as a mechanical obstruction can be diagnosed or even thought to be probable. This procedure places the entire intestinal tract at rest and places the patient in a better condition for operation.

Congenital Pyloric Stenosis.—The most common pathological condition underlying the pyloric stenosis of infancy, according to J. J. Schmidt (*Münch. med. Woch.*, February 14, 1905), in a muscular hypertrophy of the pyloric sphincter combined with spasm owing to irritation from errors of diet or too large meals. The common symptoms are projectile vomiting during or shortly after feeding in otherwise healthy infants, crying spells owing to painful spasms, and rapid loss of weight. The vomitus does not contain any bile, the stool is chiefly made up of mucus and excretion of urine soon becomes deficient. If peristaltic movements of the stomach can be detected and if a tumor is palpable, the diagnosis is easy, but this is the exception. In moderate cases internal treatment is in place (hot applications to the stomach, moderate amounts of milk every three hours, and small doses of opium); in the severe cases, however, only an operation will save the life of the child. The best results are obtained from gastro-enterostomy; the fatal cases reported after this operation are solely due to the wretched condition of the patients owing to too prolonged internal treatment.

Latent and Ambulatory Plague.—In a recent proclamation, the governor of Hongkong has pointed out the great danger from the so-called latent plague, that is, a form of plague where the afflicted are hardly ill yet where the blood, when examined is found to contain very many plague bacilli. The great danger from this form of disease, should it exist, is very evident. Blood cultures from a large number of cases from the Philippines, which were not sick but had come into intimate contact with plague patients, were made by M. Hertzog (*Virchow's Archiv*, Vol. 179, No. 2) to settle this question, but the results were negative in every instance. The constant repetition of epidemics is therefore not due to unrecognized cases but to the apathy of the Chinese who do not abide by the ordinary rules of hygiene. In conclusion, mention is made of a very mild case which died very suddenly. At autopsy, a metastatic bacillary focus was found in the pulmonary artery and a rather recent tuberculous process in the lungs.

Aspergillosis of the Lung Cured by Operation.—An interesting case of aspergillus infection of the lung is reported by G. Schwartz (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 1 and 2). The patient complained of fever, loss of strength, purulent expectoration and occasional hemoptysis. The physical examination revealed consolidation in the lower portion of the right lung, and after many futile attempts, pus was found after aspiration. The patient was at once transferred to the surgical division, where a pneumonotomy was done. A piece of necrotic lung, the size of a small apple and containing many mycelia of *Aspergillus fumigatus*, was removed. The patient made a perfect recovery in a very short time. The portal of entry of the fungus was probably the nose, since the patient remembered having been troubled with crusts there, which on examination showed the same fungus. The latter grew well on artificial media and proved strongly pathogenic when injected into mice.

Valedictory Address at Johns Hopkins University.—the *Journal of the A. M. A.*, prints in full, March 4, the valedictory address of Dr. Osler, of Johns Hopkins University, which has been quoted and misquoted in the daily press. He deals with some of the problems of university life and states that at times the loss of a professor may be of benefit to a university. He stated that to a man of active mind too long attachment to one college is apt to breed self-satisfaction, to foster a local spirit, and to promote senility. He said that much of the phenomenal success of the Johns Hopkins University has been due to the concentration of a group of intellectual men, without local ties, whose operations were not restricted and who were willing to serve faithfully in whatever field of action they were placed. Dr. Osler advised the interchange of teachers, both national and international, and even advised the changing of college presidents now and then "for the good of the exchequer." He said that intellectual infantilism and progeria were two appalling maladies due to careless habits "of intellectual feeding." As a prophylactic measure he advises visiting other universities and colleges, both at home and abroad. He said that it is a very serious matter to have all the professors in a university growing old at the same time, and said that there should be a fixed period for the teacher, either of time of service or of age. He spoke of the comparative uselessness of men above forty years of age, and said that to modify an old saying, "A man is sane morally at thirty, rich mentally at forty, wise spiritually at fifty—or never." He said that the young man should be encouraged and afforded every possible chance to show what is in him, and that the chief value of the teacher, who is no longer a productive factor, is to determine whether the thoughts which the young men are bringing to the light are false idols or true and noble ideas. He said that it would be of incalculable benefit, in commercial, political and professional life if men would retire from work at the age of sixty. He said that the teacher's life should have three periods, study until twenty-five, investigation until forty, professional until sixty, at which age he would have him retired on a double allowance. He went at some length into the history of the Johns Hopkins Medical School, mentioning the strict entrance requirements and the scientific teaching in laboratory work especially. He dwelt on the necessity for practical training in the hospital wards as well as in the laboratories and class rooms. He said that the faculty of Johns Hopkins University has been blessed with two remarkable presidents, who had been a stimulus in every department, and that the good fellowship and harmony among the faculty has been delightful.

Obstruction of Retinal Arteries.—Allen Greenwood (*Journal A. M. A.*, March 11) considers at length the three principal causes of obstruction of the retinal arteries, viz., arterial disease, embolism and spasm. He thinks that primary thrombosis is rare, though thrombosis is frequently a complication of the above conditions. The most important arterial disease is

arteriosclerosis, and he points out the earliest danger signals of this condition. They are a slight increase of arterial reflex, slight irregularities in the size of the arteries, slight congestion of the disk, and feathery outline. Where the artery crosses above a vein the latter may be compressed. A little feathery exudate is often seen beside the arteries which should not be mistaken for the opaque nerve fibers often observed. With thickening of the central artery venous pulsation may sometimes be observed ophthalmoscopically; one or all of these conditions may be present. In more advanced cases the light reflex is increased, the arteries become beaded, retinal lesions appear and, finally, we have the full picture of albuminuric retinitis. The early stages of arterial degeneration require the careful inspection of the upright image for their detection. Spasm, the author believes, most frequently occurs in the early stages of arteriosclerosis, and should be looked on as a warning of future obliterating endarteritis. The treatment of arteriosclerosis is mainly a well-regulated life and avoidance of nerve strain and excesses and keeping elimination and digestion unimpaired. Greenwood has been in the habit of advising long-continued use of small doses of iodide of potash. The treatment of embolism is rarely prompt enough to save the function of the retina, but Greenwood advises the early use of vasodilator drugs and deep massage to carry the embolus, if possible, into the smaller branches and to reduce the field defect. For spasm the treatment for arteriosclerosis should be carefully followed. Nitrate of amyl might be used to cut short an attack.

Treatment of Epidemic Cerebrospinal Meningitis by Diphtheria Antitoxin.—E. Waitzfelder (*Med. Rec.*, March 11, 1905) reports the results following the treatment of seventeen cases of epidemic cerebrospinal meningitis by the injection of large doses of diphtheria antitoxin according to the suggestion of A. J. Wolf. Five of the patients recovered completely; three died, of whom two were adults, and nine cases are still under treatment. Of these, five show such marked improvement as to indicate probable recovery, four being convalescent. Of the remaining four cases, all are in a serious condition and prognosis is impossible at the present time. Most of the cases were severe in their onset with well marked evidence of profound constitutional infection, as is to be expected in the early periods of an epidemic. The doses of antitoxin given were 6,000 units to children less than five years of age; 8,000 units to those between five and twelve, and 10,000 units to adults. This amount was injected under the scapulæ on alternate days. In some severe cases it was given daily. Usually the injection was followed by a fall of temperature and pulse, and great improvement in the general symptoms. No bad effects developed as the result of the administration of the antitoxin. Should the results in these cases prove to be consistently repeated in others, the author believes that to Dr. Wolf belongs the credit of having discovered the remedy for one of the most fatal diseases, and of having evolved a plan of treatment not second in its effects to the antitoxin treatment of diphtheria.

Case of Cicatricial Stricture of the Esophagus.—A. B. Atherton (*Med. Rec.*, March 11, 1905) describes a case of obstinate cicatricial stricture of the lower end of the esophagus which when first seen admitted only an olivary French bougie two millimeters in diameter. By gradual dilatation it became possible to introduce an instrument of twice this size, but after this no further stretching could be effected. The stomach was therefore opened and the stricture softened by the use of the string and bougie procedure of Abbe, after which gradual dilatation became possible so that a short red rubber bougie one centimeter in diameter could be permanently worn. The upper end of the bougie lay at the junction of the pharynx and esophagus and was secured by a silk thread fastened to a tooth or to one ear. When last heard from, a year after the operation, the patient was still obliged to continue the daily use of the bougie, otherwise the stricture soon contracted.

Advances in the Physiology and Pathology of the Pancreas and Their Application to the Diagnosis of Pancreatic Diseases.—John C. Hemmeter (*Am. Med.*, March 11, 1905) in a lengthy article, fully considers this subject. Of special interest are his observations concerning the diagnosis of relative pancreatic insufficiency from defective protolysis, amyolysis, and adipolysis. He believes the effort to determine the degree to which protolysis is interfered with is rendered futile by the presence of erepsin, secreted in the intestinal juice, and which can break down proteids very rapidly after they are once attacked by gastric juice. Defective fat digestion as a gauge for pancreatic insufficiency is equally disappointing. However, he believes great aid can be obtained from the method of Adolph Schmidt. This is based upon the physiologic fact that only gastric juice can digest connective tissue (collagen) and only pancreatic juice can digest the nuclear substance of meat fiber. Hence the presence of remnants of undigested connective tissue in the feces indicates insufficiency or absence of gastric secretion and the presence of nuclei in the cells of meat fibers points to insufficient pancreatic secretion. Hemmeter tested the stools of two patients, one suffering from pancreatic cyst, comprising the duct of Wirsung and the other from a stenosis of the duct caused by an old pericholecystitis. In both cases the stools contained muscle fibers, showing well-preserved nuclei.

Medical Treatment of Gastric Ulcer.—Frederick P. Henry (*Am. Med.*, March 11, 1905) says: The tendency of gastric ulcer is toward recovery as proved by the frequent presence of cicatrices in the stomach post-mortem. The object of treatment is, therefore, to assist nature. This is best achieved by rest, general and local. The patient is confined to bed and nourished for a longer or shorter period, according to the idiosyncracies of the case, by rectal enemas. Opium is advised during this period for the purpose of allaying pain, quieting peristalsis and obtunding the sense of hunger. Milk and milk-gruel should be the sole articles of diet for one, two, or more weeks after nourishment per os is resumed. The milk should be mingled with lime water. Sodium bicarbonate is not recommended because of the evolution of gas attending its use. The formation of hard, indigestible curd may be prevented by mingling the milk with flour previously well boiled with milk or water, or, this failing, the milk may be peptonized. Buttermilk is sometimes an excellent succedaneum for milk. As the case progresses favorably, row or soft-boiled eggs, meat broths or beef peptone are added to the dietary, but the diet of health is not resumed until several weeks after the beginning of treatment. Among medicines, bismuth subnitrate, in large doses, suspended in barley water or mucilage, is believed to be of benefit. Silver nitrate is inert, because of its immediate conversion, in the hyperacid stomach, into the insoluble chloride. Mercurials are emphatically condemned. Vomiting is treated by cessation of feeding per os, by morphine hypodermically, and by cocaine hydrochlorate; hematemesis by ergot and adrenalin hypodermically and by the administration of ice, gallic acid and acetate of lead.

Carlsbad water or Carlsbad salt, dissolved in a large amount of water, should be slowly swallowed during the early morning hours. Anemia, or chlorosis, if present, is to be treated with iron albuminate which may be prepared extemporaneously after the formula of Ewald. Leube's method of treating gastric ulcer by continuous poulticing is discussed and recommended with some modifications which consist in "nourishing the patient during the first week of treatment either entirely or partially by rectal enemas and in the pro re nata employment of opium and its derivatives." Henry has seen "nothing but advantage in the judicious employment of opiates in gastric ulcers."

THERAPEUTICS.

Serum-therapy of Hay-fever.—The manufacture and use of pollantin, the antitoxic serum recommended against hay-fever, is given by A. Lübbert (*Therap. Monatschft.*, December, 1904). A toxalbumin is isolated from the pollen of the grasses liable to set up a catarrh, and this is then injected into horses in gradually increasing doses. After two to three weeks a high degree of immunity is established and the blood is withdrawn and allowed to express its serum. The subcutaneous use of pollantin is not recommended since the immunity is only partial, and of short duration; it is much better to apply the serum directly to the nose, eyes or pharnyx (one to two drops every morning during the season). If a reaction sets in, the dose is to be repeated. Very obstinate cases should carry a small bottle with dropper with them every day and resort to an instillation as soon as the first irritation is noticed. If the attack has already set in, the pollantin should be used every ten minutes and the patient instructed to stay indoors.

Specific Treatment of Recurrent Fever.—Since all treatment of recurrent fever is without avail, G. Gabritschewsky (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 1 and 2) has attempted to obtain a specific antiserum, according to the following method: The blood from patients known to contain the spirilla was defibrinated and injected in quantities of 5 c.c. into mules and zebus, since these animals are said to be especially susceptible. After three weeks the animals were bled and the blood then used for subcutaneous injections in man. A decided cure was never obtained, but after total amounts of 40 to 60 c.c. the frequency of the recurrent attacks was considerably diminished. Good results were also seen from removing a certain amount of blood from the vein at the elbow, defibrinating it and warming it to destroy the spirilla and then reinjecting into the patient. Better results would no doubt be obtained if all these experiments could be made with pure cultures of the spirilla, but it has not yet been possible to grow them outside of the body.

The Action of the Vagus on the Respiration of the Tissues.—The researches of Stefani have shown that in the higher animals the cardiac inhibitory action of the vagus increases with the rise of temperature, and in this way, by moderating the action of the heart, the vagus protects it from the exhaustion produced by fever. F. Soprana (*Arch. Ital. de Biol.*, October 31, 1904) has supplemented the above researches by demonstrating that the vagus furnishes a complex mechanism, defending the tissues from the effects of high temperature. It serves to moderate the intensity of the oxidative processes, which are otherwise augmented by an increase of the bodily temperature.

The Auto-digestion of Pepsin.—It has been found by A. Herlitzka (*Arch. Ital. de Biol.*, October 31, 1904) that pepsin placed in the thermostat with hydrochloric acid, slowly loses its activity, with the formation of peptones. It is assumed that one part of pepsin acts upon the other, peptonizing it, and that this process is a true auto-digestion of pepsin. These results contribute anew to the conclusion that pepsin is a true proteid.

The Diuretic Action of Theobromin.—This drug is effectual in producing marked diuresis in cases of hydrops in which the cardiac action has previously been insufficient according to V. Plavec (*Arch. Internal. de Pharmaco. et de Therap.*, Vol. XVVV, Nos. 3 and 4). It is therefore no genuine diuretic, but is really a cardiac drug, increasing the contractile power of the heart-muscle. In exceptional cases, the vasomotor nerves are affected in such manner as to cause a moderate fall in blood-pressure, which neutralizes the effect of the heart. The rise in diuresis produced by theobromin results in consequence of the increased blood-stream through the kidneys.

Treatment of Laryngeal Tuberculosis with Sunlight.—Sunlight will influence favorably tuberculosis of the lungs, but it will also exert a beneficial action upon a focus located in the larynx. A novel scheme for introducing the rays of light into the throat, is suggested by L. Kenwald (*Münch. med. Woch.*, January 10, 1905). An ordinary hand-mirror is fixed on a level with the mouth of the patient, who is in a sitting position, with the back toward the sun. The rays of light are reflected into the mouth; the patient then pulls out his tongue with the left hand and introduces a laryngeal mirror so that he can see the reflection of his own glottis in the hand mirror. With a little practice even an unskilful patient will soon acquire this technic. The good results of this treatment are best demonstrated by a patient who never succeeded in illuminating the entire portion. The parts which had been exposed to the rays of light appeared healthy, with remarkable retrogression of the tuberculous foci, while the unilluminated portion still presented the original appearance.

Investigation of Magnesium Dioxide.—J. Wintterberg (*Med. Blätter*, 1904, Ne. 43) calls attention to Ehrlich's early investigations on the oxygen requirements of the organ in which he shows the essential value of cell respiration, and the use of oxygen internally in enhancing such oxidations. The recent work of Ehrlich on reduction of methylene blue in the organism seems to show that magnesium dioxide taken internally is capable of splitting off a certain amount of oxygen which can be utilized in cell respiration, and following these investigations there has been a marked increase and interest taken in the internal administration of such products. At the present time magnesium dioxide is widely used in the form of biogen, and clinical results substantiate the bearing of the indicated pharmacological researches.

Treatment of Skin-Cancers with Fluorescent Substances.—Six cases of superficial cancer of the skin and mucous membrane have been treated by A. Jesionek and H. v. Tappeiner (*Deutsch. Arch. f. klin. Med.*, Vol. 82, Nos. 3 and 4) by impregnating (topical applications and injections) the ulcerating tissues with fluorescent substances, usually eosin, and then exposing the patient to sunlight. The concentration employed was 0.01 to 5 per cent. A decided improvement was observed in all cases; in four, the ulceration cicatrized and the tumor-masses disappeared completely.

Atropine in Gynecology.—D. Drenkhahn (*Therap. Monatschft.*, February, 1905) speaks very highly of

the use of atropine in diseases of women, particularly in septic conditions of the uterus. Puerperal fever is at first a purely local condition for which the chances for a cure are exellent, if the uterus is kept at rest. Contractions of the uterus will force the germs through the lymphatic channels into the blood and thus bring about a general sepsis. Atropine is the best remedy known to stop the contractions and will also diminish absorption from the large surface of the puerperal uterus.

Fibrolysin.—Thiosinamine was first recommended for lupus but its use has been extended to all morbid conditions due to scar tissue (urethral stricture, parametritis, pyloric stenosis, etc.). One great disadvantage of the drug is its insolubility in water. Injections of alcoholic solutions are exceedingly painful and the application of plasters, etc., is less efficient. F. Mendel (*Therap. Monatschft.*, February 1905) has therefore placed on the market the double salt of thiosinomine and sodium salicylate, to which he has given the name fibrolysin. This is perfectly soluble and may even be injected directly into a vein. It is rapidly split up into its component parts and posseses a remarkable elective action upon scar tissue, no matter where this may be. Even after a single injection, swelling and softening occurs, but to bring about a permanent cure, repeated injections will be necessary. In certain conditions, such as stricture of the urethra and esophagus, fibrolysin will soften the thickened tissues, but mechanical treatment will be necessary to bring about the necessary dilatation.

Fibrosarcoma Treated by Roentgen Rays.—C. E. Skinner (*Arch. of Electr. and Radiolog.*, October, 1904) gives an account of a patient, afflicted with a large fibrosarcoma, deeply seated in the abdomen, which yielded in a remarkable way to the Roentgen rays. The case had been pronounced inoperable by competent surgeons and erysipelas toxin had been used for ten months with only temporary success. After 46 applications during a period of 125 days the size of the tumor had increased appreciably but considerable improvement was noticed in the general condition. After this, the tumor began to diminish slowly in size and when the total number of applications had reached 136, it had disappeared entirely. The original dimensions of the spindle-cell sarcoma were: horizontal, 10 inches; vertical, 8 inches; anteroposterior, 5 inches.

Treatment of Pertussis.—Excellent results are reported by H. Stepp (*Therap. Monatschft.*, November, 1904) from the use of fluoroform in whooping-cough. As a rule, the disease lasts about thirty-five days, but with this drug the duration was reduced to eighteen. Another advantage is that even very young infants show no bad after-effects. The solution generally employed contains 2 to 2½ per cent. fluoroform dissolved in water. Very young infants receive two teaspoonfuls every hour, while older children may take as much as a tablespoonful. The treatment should be continued for three to four weeks.

The Action of Ergot and Ergotinine Upon the Cardio-Pulmonary Circulation.—The intravenous injection of the fluid extract of ergot produces in the dog a marked elevation of blood-pressure in the pulmonary artery, according to L. Plumier (*Jour. de Physiol.*, January 15, 1905). This is caused by an energetic constriction of the blood-vessels of the lungs, through a direct action upon their walls. The dog's heart, removed from the body and nourished by means of Locke's solution, is at first weakened by ergot, and then strengthened and its action accelerated. The transient fall in carotid blood-pressure is due to the primary depressing action on the heart. The ergotinine of Tanret has almost no effect upon the heart and pulmonary blood-pressure.

PRESCRIPTION HINTS.

Infantile Bronchopneumonia.—Bronchopneumonia is a much graver affection than pneumonia in children, generally secondary, as a complication of smallpox, grippe, diphtheria, typhoid fever, or measles. When children are affected by any of these maladies, rigorous antisepsis of the natural orifices should be enjoined. In children of a certain age antisepsis of the nasal fossæ will be obtained by inhalations of

℞	Menthol	grs. iii
	Boric acid	ʒss

For one powder dissolved in an infusion of the leaves of the eucalyptus tree and inhaled through a funnel. In young children, these inhalations can be replaced by instillations of

℞	Menthol	grs. xx
	Oil of sweet almonds	ʒii

The mouth should be frequently rinsed with a solution of boric acid, and the eyes bathed with the same liquid, while oxygen water, reduced to half strength should be instilled into the ears.

When in the absence of such prophylactic measures, or in spite of them, bronchopneumonia does set in, the treatment varies according to the intensity of the disease. If the child is not too depressed a vomitive will clear the large bronchi of mucosity, but if dyspnea with tendency to cyanosis be present, a teaspoonful of the following mixture every hour should be given:

℞	Acetate of ammonia	ʒss
	Rum	ʒiv
	Syrup of ether	ʒiv
	Water	ʒiii

To control the fever cryogenine might be ordered:

℞	Cryogenine	grs. xx
	Rum	ʒiv
	Syrup of tolu	ʒiv
	Syrup of cinchona	ʒiv
	Water	ʒiv

A dessertspoonful three or four times a day.

Hydrotherapy is one of the best means we have of treating bronchopneumonia. The wet sheet, warm or cold baths, according to the judgment of the attendant.

The warm baths, on the other hand, should be given at 100° F., in which the patient remains from ten to fifteen minutes. Cold should be applied to the head while the child is in the bath to prevent cerebral congestion. In cases of collapse, mustard should be put in the bath.

Revulsives consist in mustard poultices and small blisters left on four hours and renewed.

As to a curative method, none has yet been found. Netter appears to have obtained good results from

℞	Collargol	grs. xxx
	Vaseline	ʒiii
	Lanolin	ʒi

Rubbed into the axilla or the groin for about fifteen minutes, then wiped off and the place covered with oiled silk.

If at the end of a month or six weeks the patient has not quite recovered, tonic treatment should be ordered and the air cure.

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THE NEW YORK LYING-IN HOSPITAL.

THE open discussion in the recent daily press of the condition of affairs at the New York Lying-in Hospital must necessarily tend to lower a very serious matter to the level of a routine hospital schism. It is a very unusual event, however, when practically the entire medical staff of a long-established hospital, including the pathologists, and even a member of the Board of Governors tender their resignations in a body, leaving a small, peculiarly intrenched minority in nominal control of the situation.

It is not a pleasant task to discuss the very peculiar features of this situation, but it appears to be of such importance to the medical profession of New York City, to the art of obstetrics, to the general community, and especially to the patients who seek this hospital, that it becomes a plain duty to point out some of the abuses which have long been practised at the institution, and to urge their removal.

It is a matter of record that during the last few years no less than sixteen physicians who had been attracted by the apparent possibilities offered by the institution, have resigned, and it is an unsavory fact that these resignations have resulted from dissatisfaction with the arbitrary behavior of the one man whom the generous donor placed in absolute control of the new building. Now comes the resignation of eleven more of the staff, so that twenty-seven men, including most of the prominent younger obstetricians of New York, have registered their refusal to tolerate the conditions prevailing.

From the excellent quality of the original studies in the annual report for 1897, unfortunately almost the only one, and from the initial equipment of the new Lying-in Hospital, pronounced the best of its type in existence, it was confidently predicted that the institution would become the leading scientific obstetrical center of the country. Instead, there has been an absolute lack of scientific work in obstetrics, charges, too well founded, of startling incompetence in the routine clinical work in certain wards and operating rooms, open ruptures between the medical director and any progressive colleague who attempted to introduce modern methods, and finally complete disintegration with the stigma of having been tried and found wanting by a score of the most active obstetricians of the city. Not the least of the unworthy chapters in its history has been the attempt made to employ the great possible value of the institution for instruction of students to further professorial aspirations which must otherwise have seemed chimeras to all but the aspirants.

Not even the nurses have escaped the baneful effects of whimsical and abused authority, for an enforced attendance at the "Lying-in" has long figured as one of the greatest of prescribed trials in various training school circles.

It is well-known that the Board of Governors have not been wholly ignorant of the state of affairs. In fact, it is betraying no secret to admit that their troubles have been severe, especially since in the words of one of these, the hospital became "the laughing stock of the country." For it is impossible to obtain bequests from general sources for an institution which is everywhere known to exist for selfish professional interest, and hence the directors have faced the alternative of closing the hospital or keeping it open upon the old plan. At least one of them has indicated by his resignation that it were better to close it.

It is seldom that the airing of soiled linen is decent or justifiable. We realize the unsavory character of the foregoing references, but we hold it justifiable to protest without let or hind-

rance where the progress of obstetrics, at present a lame duck in medical science, the obstetrical teaching and professional chairs in metropolitan universities, and the lives of indigent women in labor appear to be menaced for purely personal considerations.

Contrary to the impression given by one of the daily papers, we can assure the governors that neither the Lying-in Hospital nor any other can be rescued from condemnation upon any such plans as theirs, and that after the present upheaval no self-respecting physician can afford to hold a position on its staff. We would further remind the Board of Governors that the Society of the Lying-in Hospital was handed down to them by such men as Alexander Hamilton, DeWitt Clinton, Frederick de Peyster and Nicholas Fish, and that their office, now become public, is a public trust.

"IT MIGHT HAVE BEEN CAESAR—IT IS SMITH."

The blessings that pertain to a paternal government do not appear to be of the variety that brighten, particularly when they take their flight across the Western Ocean. In the good old days of yore, when knighthood was in flower, or when the patriarchal Arab sheik pleasingly combined the duties of the midwife with the functions of the undertaker and watched over and assumed the personal charge of his followers from the cradle to the grave, affairs were naturally conducted with a high hand. But the world "do move" and customs change with its revolutions and though free trade may or may not be desirable in business undertakings, there is no necessity for "protection" or for the official vaunting of foreign medical quackery.

It now appears that the United States Consul at Nottingham, England, has reported a "new treatment for defective eyes" and that this having been published in the Daily Consular Reports of the Department of Commerce and Labor, the craze which has caused the greatest excitement in England has been transplanted and has taken violent and sudden root in this country. Mr. F. W. Mahin, the consul, writes: "This locality is much interested in a remarkable new method of treating defective eyesight. It is described briefly as "Manipulation of the eye," and was thought out and developed by Dr. Stephen Smith, surgeon to the eye department of Battersea Park Hospital. The precise method of treatment is not disclosed, remaining the inventor's secret. The treatment is described as gentle and gradual, a few minutes daily, causing no pain and having no injurious effect of any sort. Some patients are cured in a week, and in all cases improvement is rapid. Thirty patients who previously had to wear spectacles have so far been treated by Dr. Smith and with one exception it is stated all have discarded glasses and can now read at either long or short distances as easily as people who have never needed glasses. The cures applied to myopia (short sight), hypermetropia (long sight) and astigmatism (irregularity in the shape of the eye) and are claimed to be permanent, which, of course, remains to be demonstrated. Optimists assert that the general use of this method will practically abolish eyeglasses."

Now, in examining into the merits of any alleged original procedure in the practice of medicine, two things are to be taken into consideration. First; if the application *is* new, and second the standing and professional position of the person presenting it. In regard to the originality of Dr. Smith's "discovery" he may have achieved, though we doubt it, a success that other experimenters in the same direction have failed to attain, but he is not by any means the first worker in that particular field. The *British Medical Journal*, which is generally a most conservative and carefully edited paper, is singularly ill informed when it states, that "massage has not, so far, been credited with the power of altering the shape of a living elastic globe," and if the rest of the conclusions on this theory are based on a similar want of knowledge of the facts, it will hardly be necessary for American ophthalmologists to enter the lists to tilt with windmills. For a great deal has been written on the influence of massage upon the errors of refraction by Darier in 1899, by Gradenigo in 1894, and by Domec, of Dijon. In Darier's *Leçons de Thérapeutic Oculaire*, published in 1892, a full description is given of the effect of pressure massage upon hypermetropia, myopia and other errors of refraction, while Richey, of Washington, D. C., has repeatedly called attention to the beneficial effects of massage in the treatment of glaucoma. This, however, is another matter, and is probably due to the relief of venous stasis by the softening of the rheumatically stiffened sclera, rather than to any expansion with a consequently increased cubic capacity of the eyeball.

For it has been, since the days of the publication of Donder's classical work on "The Accom-

modation and Refraction of the Eye," a cardinal point in mathematical optics, that the lenticular and refractive system of all eyes is practically one and the same thing, and that the optical deviations from the standard emmetropic eye are due to an increased or lessened length of the antero-posterior diameter of the globe and not, as hitherto believed, to an increased or deficient lenticular activity. Such being the case anatomically we do not see how Dr. Smith could have "thought out" a rule of three (myopia, hypetopia and astigmatism) that is good enough to work both ways. If his "gentle massage" will cause the shortened hypermetropic eye to gradually elongate, until the retina is pushed back to the position where the refracted rays will meet on its accurately adjusted surface, well and good. But how will the *same* manipulation induce the distended tissues of the myopic eye to contract until the distant retina has been drawn up to the focal point? All this seems more blind than the professor's glass-needing patients, but we confess that we do not understand the modus operandi and must, therefore, be content to let it remain the "author's secret" until this modern sheriff of Nottingham, with his eagle eye and massive brain, is either more comparative in his elucidations or less positive in his prophecies.

With regard to Dr. Stephen Smith, himself, he seems to be pursued by the proverbial fate of prophets in their own country, as he has been thoroughly damned by the English medical press without even the customary amelioration of faint praise. Thus the London *Ophthalmoscope* says, editorially, that "Mr. Stephen Smith, who has leaped into such notoriety, should be handled without gloves. This public proclamation of what he claims to be a scientific discovery to a knot of newspaper reporters, is an outrage on the traditions that govern medical life, which undignified procedure has proved a huge advertisement for himself and incidentally to the antivivisection hospital over whose ophthalmic department he presides." Meanwhile he seems to have entered into a sort of free-for-all, catch-as-catch-can public fight with an optician, one Aitchison, while an "ophthalmic surgeon," a Dr. Wm. Ettles of 141 Minories, is apparently to hold the stakes and to act as umpire between surgeon and tradesman.

After all, it is not what Mr. Smith has or has not done that is remarkable, but the effect that its publication has had on the community at large Even the tulip craze was second to it in the excitement that the belief that eyeglasses were to be done away with has produced and the succeeding depression will be vast in extent and cerulean in hue. In fact, as the "discovery" is old and as Smith's pretentions are undeniably new, while the scheme is adapted from the experiments of others and will prove unquestionably disappointing to the masses, the whole "new method" can be poetically summed up in the distich of our grandmothers concerning the necessities of the trousseau:

"Something old and something new,
Something borrowed and something blue."

CANCER.

WE HAVE become accustomed to the erudite discussion which has been going on among researches into the cause of cancer, and the claims and counterclaims of the metabolists and the infectionists no longer excite our hopeful etiologic minds. It is far too early probably, in fact, to trend toward either of these supposedly opposed theories of cancer. Indeed, some physiologists, knowing in the latest lore of protoplasmic structure and metabolism, can imagine a sort of infection or inoculation which might come within the scope of both theories and from its subtlety long escape the observation of the multitude of students of this dreadful scourge. Without discussing the failure (save in a negative and destructive sense) of the Harvard Cancer Commission or the vague and groping suppositions of the metabolists, we may well direct attention to work done by Gaylord, Clowes, and Baeslack, of Buffalo (a preliminary report of which appeared in the MEDICAL NEWS of January 14; as, perhaps, a gleam destined to brighten late or soon into the day of hope for millions of mankind. The results so far reported are meager, too meager and too far away from the deadly cancers of the human stomach and uterus and breast to be much more at present than a hopeful beginning; yet, on the other hand, perhaps not so far away despite their meagerness!

Gaylord and his coworkers, inoculating white mice with bits of mouse-tumor obtained from Jensen, of Copenhagen, and called by him adenocarcinoma, found that it could be readily communicated from mouse to mouse, twenty to seventy per cent. of the inoculations made being successful. About seven months after the inoculations of the tumors were begun they "noted, for

the first time in a number of mice that the tumors, which had grown to a demonstrable size, ceased growing and underwent a form of spontaneous retrogression which terminated in the disappearance of the tumor without recurrence." Injecting the blood-serum of these mice which had recovered spontaneously, it was found that it possessed not only a strong immunizing power over recurrence in infected mice, but that it caused the disappearance of tumors not too far advanced and stopped the growth in all cases, with a diminution of the prominent general cachectic symptoms of the grave disease. Moreover, the serum of the mice so cured becomes in its turn an immune serum. The degree of the immunity conferred varied widely, but it was invariably immunizing in its action. In one case one-fifth of a cubic centimeter of the serum "caused the rapid retrogression and entire disappearance of two tumors in one animal and one in another, all of which were as large as peas, in the space of three days."

As to the nature of the curative serum these gentlemen incline to a present belief that it is not cytolytic in its action. The changes found in the epithelium of retrogressed tumors appear to be those suggestive of simple atrophy. The connective tissue stroma of the tumors was always largely overgrown, leaving only traces of epithelium—much the condition, in fact, described by Becker and Petersen as existing in the rare cases of marginal healing in cancers of man. These circumstances seem to be of especial significance, since they indicate a close correspondence of a very hopeful nature, between the conditions in the mice and in human individuals. Something more hopeful still, because pointing to a possibility of cure, these histologic similarities suggest that perhaps comparatively little of something or other is required in the infected blood-serum of man to make it too capable of tipping the balance favorably for the patient, since spontaneous cure in man is occasionally observed.

Thus the present case stands—rich in hopeful possibility, even on grounds so meager, yet as these summarized above. Few things so greatly important in medicine as the nature and curing of cancer burst forth complete at once. This looks like a glimmer of saving light. A year hence we shall be better able to say if it, indeed, be so, or only another *ignis fatuus* in this wretched desert all men would reclaim—as sad to humanity as another "city of dreadful night."

ECHOES AND NEWS.

NEW YORK.

American Journal of Surgery.—Dr. Joseph MacDonald announces that he has severed his connection as Manager and Managing Editor of the *International Journal of Surgery* with which he has been associated for the past fourteen years. This move was made for the purpose of enabling him to publish an independent practical surgical journal and he has purchased all rights in the *American Journal of Surgery and Gynecology*, and with the April number this journal, thoroughly modernized and largely increased in circulation, will be issued from New York as the *American Journal of Surgery*.

A New Training School for Nurses.—A training school for nurses has been started at the new French Hospital 450 West Thirty-fourth Street, New York. The course is to be two years including a two months probationary term, and will include experience in obstetrics and diseases of children, as well as all branches of general medicine, surgery and gynecology. Applicants are not required to speak French, but will receive instruction in the language as a part of their course. The hospital has a capacity of about 130 beds including private rooms, and both building and equipment are thoroughly up to date.

Extension of the Fight Against Tuberculosis to Brooklyn.—The committee for the prevention of tuberculosis of the Brooklyn Bureau of Charities, the formation of which has been under consideration by the board of directors of the bureau for some weeks, has been formally organized. The committee consists of the following persons: Dr. J. H. Raymond, chairman; William I. Nichols, secretary; Miss Margaret Dreier, treasurer; A. Abraham, Dr. H. Arrowsmith, Mrs. Andrew D. Baird, Mrs. Tunis G. Bergen, Dr. H. M. Briggs, Dr. Glenworth R. Butler, T. O. Callender, Dr. J. H. Darlington, Mrs. H. E. Dreier, Percy S. Dudley, Dr. H. A. Fairbairn, Dr. John F. Fitzgerald, Dr. J. W. Fleming, Mrs. R. W. Gage, Dr. Thomas L. Fogarty, Horace Greely, Mrs. James S. Hollinshead, Dr. T. M. Lloyd, Mrs. Willis L. Ogden, Edwin Reynolds, William Strauss, Benjamin Strauss, Mr. and Mrs. Alfred T. White, Dr. John S. Billings, the Rev. N. D. Hillis, Mrs. William Chandler Smith. The chairman will appoint an executive committee who will take actively in hand the work of the committee. The next meeting will be a public one, to be held in the hall of the Kings County Medical Society, on Bedford Avenue.

Meningitis Commission.—As a first step toward checking the great increase in the city's death rate, due to the inroads of cerebrospinal meningitis, Dr. Darlington, head of the Health Board, has appointed seven leading physicians a commission to thoroughly investigate the disease and, if unable to provide a cure, to find a preventative. The number of deaths last week from the disease were 76 as compared with 28 in the corresponding week of 1904. The total number of cases in the city from January 7 to March 11 was 386, of which 70 per cent. proved fatal. The number of cases of the disease in the corresponding period last year was 75. Four of the seven members of the commission have already agreed to serve and it is believed the other three will express their willingness to-day. The members are Dr. William M. Polk, chairman, dean of Cornell Medical College; Dr. Walter B. James, professor in the Col-

lege of Physicians and Surgeons; Dr. William P. Northrup, professor of children's diseases in the University and Bellevue Hospital Medical College; Dr. Simon Flexner, of the Rockefeller Institute; Dr. Joshua M. Van Cott, pathologist at the Long Island Medical College; Dr. E. K. Dunham, pathologist of Carnegie Laboratory, and Dr. William K. Draper, visiting physician at Bellevue and Minturn Hospitals. "I have chosen these men for two reasons," said Dr. Darlington last week, "first, because every one of them is an authority in medicine and knows as much as is known to-day of cerebrospinal meningitis, and second, because, taken together, they represent all of the medical colleges of New York and will have the advantage of the laboratory work of those institutions." Dr. Darlington said that he expects the deaths from this disease will reach 1,200 before the season ends. Last week, he said, deaths from cerebrospinal meningitis raised the death record a full point, else it would have been the lowest in the city's history. The first meeting of the commission will be on next Tuesday. All of the members give their services free, while the $5,000 appropriated by the city will go toward defraying the expense of compiling data.

PHILADELPHIA.

A Mass Meeting.—In order to raise money for the Fred Douglass Memorial Hospital, a meeting was held in the Holy Trinity Church, where $1,000 were collected.

Bill Passes.—The legislature passed a bill regulating and licensing the practice of osteopaths; it also provides for the establishment of a State Board of Examiners.

Nurses' Home Dedicated.—The nurses of the Women's Hospital took possession of their new home after the exercises which took place last week. The new building is four stories high, and cost $20,000. The members of the board of managers were present at the dedication exercises.

Insane Patient Escapes.—Robert P. Kelly, who has been a patient at the Pennsylvania Hospital for Insane since January 3, 1905, because of melancholia due to business embarrassments, made his escape from that institution by climbing over the wall enclosure. The authorities are unable to locate him.

Hospital Reports.—During February there were admitted to the Hahnemann Hospital wards 155 patients and 249 were treated there, 195 of which were charity patients. In the same month 770 new patients were treated in the out-wards. The expenses of the Methodist Episcopal Hospital exceeded the income by $12,164 during the year just ended.

Enteric Fever on the Increase.—Last week 247 cases of typhoid fever were reported to the Board of Health; this number exceeds that of last week's figure by 69 cases. The increase is sectional, and these particular districts are supplied by water taken from the Delaware and Schuylkill rivers. The authorities are insisting upon the use of boiled water.

Work of the Visiting Nurse Society.—The nineteenth annual report of this society shows that 33,357 visits were made during the year just ended. It is the object of this organization to give to the poor the best possible home nursing, and to teach the head of the households to care and prepare food for the sick. The house, No. 1340 Lombard Street, which the society has occupied for many years, was recently given to it by the will of J. Dundas Lippincott.

The Overcrowded Condition of Insane Hospitals to be Relieved.—At a conference, in which Governor Pennypacker, Speaker Walton and Chairman Plummer, of the appropriation committee, participated, it was decided to erect a one-story annex to each of the three insane hospitals, situated at Danville, Norristown and Warren. These structures are to be temporary, and when permanent buildings are erected the material of these structures is to be used in constructing consumptive camps.

The Crusade Against Tuberculosis.—This was the topic of D. L. F. Flick in an address before the Acorn Club. When asked his opinion of the danger of spitting on the sidewalks and in public places, and whether those people who expectorated in these places were not sufferers of tuberculosis, he replied to the question in the negative. He said "the poor consumptive is bearing more than his burden already and should not be made to share the responsibility of this evil." He informed the audience that a law should be passed prohibiting expectorating on the sidewalks and in public places.

Cerebrospinal Meningitis Prevalent.—Since the death of Dr. A. B. Craig, who contracted the disease while discharging his duty at the bedside of a patient, ill with the disease, many other cases have developed. This sad death, which must be placed in a parallel with the death of the soldier fighting for his country, has made the physicians of this city, at least, regard the disease as distinctly contagious instead of mildly contagious. The Board of Health has determined to placard the houses in which the disease occurs, and they have decided to fight it in a manner similar to that employed in rooting out smallpox. It has been suggested that the Council be asked to appropriate $5,000 or $10,000 to study the disease. Since the first of the year 26 cases have been reported; the last case that developed was first discovered while the boy was at school, so that the place had to be closed and fumigated.

Annual Meeting of the Directors of the White Haven Sanitarium.—In his annual address before the directors of this institution the president, Dr. L. F. Flick, suggested that it be put on a partial pay basis. He believes that it can be done in a manner which will avoid hardship to anyone. He recommends that $7 be charged patients for the first four weeks they are in the infirmary; $5 a week during the time they are in the sanatorium proper, and work from one to four hours a day; $3 a week during the time they are in the sanatorium proper, and work from four to eight hours a day; nothing to be charged for the month they are in the sanatorium proper, and work eight hours a day to harden. The institution would at all times have money in reserve to admit the very poor free he believes. Up to the present time the State has contributed $158,750, while the public has collected $156,422.89, so that the people have given nearly as much as the State. According to Dr. Flick's statement, 75 per cent. of the cases admitted have been restored to a condition of health, while 95 per cent. of the cases have left the institution improved. At the same meeting, General Wagner, president of the Third National Bank, offered a farm for convalescent patients. The tract of land is between Philadelphia and Bethlehem; if suited for a hospital, the farm, the General said, could be rented for a nominal amount.

Section of Otology and Laryngology of the College of Physicians of Philadelphia.—The meeting of this section was held March 15. Dr. Geo. M. Marshall read a paper on "A Case of Clonic Spasm of the Laryngeal and Pharyngeal Muscles Following a Cranial Injury." The case upon which the paper was based was exhibited. He was a man who claimed to have been sandbagged during the year 1901, and to have been operated upon because of a hemiplegia involving the arm and leg, of the right side, by Dr. Brewer, in New York, two days after the accident. The dura was slightly edematous but presented no other lesion. When the patient was seen at the Philadelphia Hospital he found it difficult to talk. Upon examination the muscles of the larynx and pharynx contracted from 154 to 165 times per minute. In discussing this case, Dr. Burr said there was some difficulty in obtaining a correct history, but from what he learned there was a cross paralysis, the left side of the face and the right arm and leg being involved. He believes there is a syphilitic basilar meningitis. Dr. F. B. Royer then read a paper on "The Complications and Sequelæ met in Laryngeal Diphtheria." He showed five cases. His paper was discussed by Drs. Griffith, Wharton, Jopson and Kyle.

Section of Medicine of the College of Physicians.—This section met March 13, where Dr. Stengel read a paper on "A Case of Tuberculous Meningitis Following Trauma in a Patient Having Tuberculosis of the Kidney, Giving a Positive Widal Reaction." The patient gave a history of trauma, the blow being received back of the ear. After the injury the patient began to vomit. Later he became stupid, although he could be aroused to answer questions; after replying he would again fall into the stupid condition. At times there were present involuntary urination. The pupils were unequal, and the movements of the eyes were incoordinate. Kernigs sign was present. The patient was in a typhoid state; the Widal reaction was positive on two occasions; nevertheless, Dr. Stengel believed the patient was suffering with tuberculous meningitis. The fluid obtained from lumbar puncture contained 60 per cent. mononuclear leucocytes, 12 per cent. transitional, 24 per cent. polymorphonuclear. The blood contained 21,800 leucocytes; blood cultures gave the staphylococcus. Later a slight facial palsy developed. The patient was now brought to operation with the idea of flushing the dura, in hopes that it might have the same effect that opening and flushing the peritoneum. At autopsy the left kidney was tuberculous, the left ureter contained many ulcers, there were many tubercules at the base of the brain. Dr. Francine, who was to read a paper on "Carbon Disulphide Poisoning," could not be present, but sent his paper and it was read by Dr. Krus. The substance is used extensively in manufacturing. Fifteen grains of the substance will prove fatal if taken. These patients, when at work, are exhilarated, but so soon as they leave the work they become depressed. When seen the patient was stupid, acting very much like a drunken man. The condition began with headache, mental depression, sometimes he became delirious during the night. Dr. Eshner exhibited the case of "Congenital Atrichia," which he reported at the last meeting.

Section on Gynecology of the College of Physicians of Philadelphia.—The meeting of this section was held March 16, where Dr. Geo. M. Boyd and Dr. A. G. Ellis read a paper on "Congenital Heart Disease." Owing to the absence of Dr. Boyd, Dr. Ellis read the paper. The article was based upon an infant upon which Dr. Ellis performed an autopsy at the Philadelphia Hospital, and found a transposition of the vessels of the heart. In looking up the clinical notes he found that the infant had lived 34 days, but during this time it had been cyanotic almost continuously, occasionally the blueness would disappear for a short time only. It suffered with dyspnea the greater part of the time. Although the child nursed fairly well it lost and gained weight alternately, so that at death it weighed a quarter of a pound less than at birth. At the autopsy Dr. Ellis found the heart globular in shape, the greater part of this organ was made up by the right side, especially the ventricle from which cavity the aorta arose. Beyond the origin of the vessel its course was normal; it gave off the usual three large branches from the arch, and beyond these it was joined by the ductus arteriosus, which was patulous. The coronary arteries arose from the aorta. The pulmonary artery took origin from the left ventricle, and then pursued its normal course. The foramen ovale was patulous. In discussing this paper, Dr. Coplin called attention to the operation that was performed by Anlog for ectopia cordis in 1888. This surgeon opened the chest by removing a piece of the sternum and then replaced the heart. Dr. John B. Deaver then read a paper on "Hysterectomy for Fibroids of the Uterus." He takes the ground that these growths should not be removed unless they give rise to symptoms, such as pressure, hemorrhage and pain. He is not so certain that many of these tumors undergo sarcomatous change. The treatment of fibroids of the uterus by electricity should, in his opinion, be condemned. Castration, for these neoplasms, he said, is irrational. Because of the frequency with which disease of the ovaries and tubes is associated with the fibroids he prefers to operate through the abdomen instead of through the vagina. He is very much opposed to the use of salt solution in the abdominal cavity. This paper was discussed by Drs. Noble, Clark, Shoemaker and Norris. Dr. A. P. Berg then read a paper on "Paraplegia Complicating Pregnancy." He is quite convinced that toxemia of pregnancy will give rise to disease of the nervous system. In the case which he reports, the woman developed a paraplegia, which he attributed to the toxemia affecting the spinal cord. His patient recovered completely some time after delivery. Drs. Rhein and Pickett discussed this paper. Dr. Theo. A. Erck read a paper on "Sarcomatous Degeneration of a Fibroid of the Uterus with Repeated Hemorrhages into the Tumor."

Philadelphia Pediatric Society.—This society met March 14. The scientific program was opened by Dr. E. C. Jones, who exhibited a family in whom five children have multiple exostoses but only three of the children could be brought. He said that the father, who is now dead, was similarly affected. The oldest child, now fifteen years old, has about fifty of these bone-like tumors scattered over his body. The growths made their first appearance at the age of four years. In the second child the tumors first appeared at the age of two years. He is now eight years and possesses about fifty of these tumors. Upon the other children the growths are less numerous. The doctor stated that there is no evidence of syphilis nor of gout, although there is a history of alcoholism in the family. Dr.

D. J. Milton Miller showed a case of chondrodystrophy fetalis. He called the society's attention to the fact that the height of a normal child at an age corresponding to the age of this child measures 45 inches, while the child exhibited measures but 36¾ inches. It measures but 16 inches from the umbilicus to the sole of the feet. It has a very large head, the bridge of the nose is depressed, and in the lumbar region there is a well-marked lordosis. He maintained that the condition is due to some fault in the primary cartilage. The periosteum, he said, grows inward, and the development of the bone depended upon this structure. Dr. Chas. W. Burr then presented a case of Stuporous Insanity at Puberty. In giving a short sketch of the history, he said that the condition began after the boy had been constipated for three days. The first noticeable symptom was sleeplessness, and a tendency to wander around aimlessly. Then he became silent, did not ask for food, and finally refused to take food, stating his mother was trying to poison him. About four months ago (about three months after the onset of the disease) he stopped talking, and apparently paid no attention to anything, but if a limb were irritated he would merely draw it away. The patient passed urine and feces involuntarily. Occasionally he resisted movements; the reflexes were gone; about one month ago he began to talk, became observant, and can now be made to obey commands. His physical condition is improving, and Dr. Burr believes the prognosis is good. Dr. J. P. Crozer Griffith then read a paper on a "Fatal Case of Chorea." During the course of his paper he told the society that the movements of the patient became violent, and that the slightest excitement exaggerated them immensely. He noted the presence of a mitral systolic murmur. Toward the end of the disease the patient's speech became altered, and finally was unable to articulate, later the patient became delirious, and hyoscine was the only drug which succeeded in quieting him. He then became stuporous; finally coma set in and the patient died. Dr. Griffith believes death resulted from exhaustion. Dr. R. Max Goepp read a paper on a "Case of Necrotic Stomatitis Following Pneumonia and Measles." The *Bacillus diphtheriæ* and the *Staphylococcus pyogenes albus* were found in the slough. The condition cleared up after the application of the Paquelin cautery. He also reported a "Case of Malignant Scarlet Fever." The condition was diagnosed by the presence of scarlet fever in another child in the family and by the onset with convulsions. The child died in forty-eight hours.

CHICAGO.

Eastern Illinois Ophthalmological and Otological Society.—A society with this name was organized in Danville, Ill., March 7. Dr. Cassius M. Craig, of Champaign, was elected president; Dr. Charles P. Hoffman, of Danville, secretary, and the Committee on Fee Bill consists of Drs. I. E. Huston and Elbert E. Clark, of Danville.

Ban on Soliciting Damage Suits.—A bill introduced by Mr. Burnett has passed the legislature prohibiting attorneys from soliciting personal or other damage cases. This measure was endorsed by the State Bar Association, and is directed against shyster lawyers, who make a business of drumming up this character of practice against members of the medical profession.

Bill to Limit Fees of Expert Witnesses.—A bill directed against physicians who make a business of appearing as expert witnesses in personal injury cases was recently introduced in the House, at Springfield, by Mr. Canady, limiting the fee to be paid an expert witness to $10. Physicians in Chicago now receive from $25 and upward for expert testimony, and it is asserted that a number of physicians make a livelihood by means of giving expert testimony.

Removal of Frank S. Betz Co.—This enterprising firm will leave their present building about May 1, and will move to their new plant at Hammond, Indiana. They leave a building a block long to go into a new building occupying over four acres of ground space. They have nearly twelve acres of land at Hammond, and over one thousand feet of switch track, which is connected with the Belt line, and can make shipments over this line much more promptly than in their old place, in fact, they can save from one to two days time in sending their goods to their customers.

Bill to Bar the Sale of Drugs.—A Mr. Clark, of Chicago, has introduced a sweeping bill regulating the sale of morphine and opium. Under the provisions of the proposed law these drugs may be sold only on prescription of a duly licensed physician. It is further stipulated that a druggist shall not refill a prescription unless certified to by the physician who gave the original prescription. The author of the bill asserts that close to 50 per cent. of the inmates in State insane asylums are suffering from the effects of these drugs. There is every indication that this bill will pass.

Care of the Insane.—According to a bill now pending in the State Legislature of Illinois, provision is made that after July 1, 1907, all insane patients who are a charge on the public shall be brought under the care of the State. This measure is clearly in line with the dictates of justice and humanity, and should tend to promote uniform and systematic action in dealing with the problem of the insane. There are at the present time outside of Cook County, in local poor-houses and other places not properly equipped for their care perhaps, one thousand insane patients. Cook County's Insane Hospital at Dunning, according to the Chicago *Daily News*, has an equal number. When any county has furnished the quota which it is permitted to contribute to the State institutions, any additional insane patients must accept such treatment as the County affords. It is obvious that every insane person in the State who is a charge on the public is entitled to treatment as good as the best accorded to others. It is also obvious that uniformity in this respect can be attained only by vesting the control of all the public institutions for the insane in a single body to be administered in conformity with the same general plan. At present the State insane hospitals lack the accommodations necessary to care for all the patients who might be transferred to them, but as the law, if passed, would not take effect for more than two years, there would be ample time in which to increase their capacity as far as might be necessary. Under the terms of the bill the Dunning institution would be turned over to the State without cost to the latter. The proposed law is a long step toward a wise and enlightened treatment of the problem for the insane. Humanity and justice require its immediate enactment.

CANADA.

Canadian Medical Journal Suspends Publication.—The *Canada Medical Record*, for many years conducted by Dr. F. W. Campbell, dean of the Medical Faculty of Bishop's College University, Montreal, has ceased publication, and has become amalgamated with the *Montreal Medical Journal*.

McGill Graduates in British Columbia.—The annual meeting of the Society of McGill graduates in British Columbia will be held in Vancouver on March 23, under the presidency of Dr. D. H. Harrison, of that city, who is at present in Southern California for the benefit of his health. The secretary is Dr. W. J. McGuigan, of Vancouver, and one of the principal items of business will be to arrange for a reunion in Montreal in 1906.

Winnipeg's Health Committee.—The City Council of Winnipeg, Manitoba, has appointed a brand new Health Committee, and they are getting down to work with great vigor. Its first work was to appoint a city bacteriologist in the person of Dr. Leeming, a native of India, but a graduate of the Manitoba Medical College, who has served as assistant to Dr. Gordon Bell, the provincial bacteriologist. The appointment of a competent staff of inspectors was the next item; and the aim of the Committee will be to put Winnipeg on a good sanitary basis early and systematically. That city does not desire to have any further epidemics of typhoid fever to handle.

The New Alexandra Hospital, Montreal.—The erection of the new English contagious disease hospital, to be called the Alexandra Hospital, is progressing favorably. The buildings will be erected in a thorough fire-proof manner, and as the cost of this has exceeded expectations, the public will be again appealed to for financial support. The site comprises a block of land five hundred feet by three hundred feet and four hundred and fifty feet on another street. There are to be nine separate buildings in the group, while the seven pavilions constituting the hospital proper will be entirely separate. Each pavilion will have its own nursing staff and will be entirely isolated.

Amalgamation of Bishop's and McGill Medical Faculties.—The Medical Faculty of Bishop's College University, Montreal, will soon be amalgamated with the Medical Faculty of McGill University. A conference was held during the past week between the two faculties, and the Faculty of Bishop's, by an independent meeting has resolved to throw in its lot with McGill. Although the terms of amalgamation have not yet been definitely announced, it is understood that McGill has promised to grant the fullest and most generous terms both to the students and Faculty of Bishop's. Bishop's Faculty will be absorbed and the teaching staff will be granted associate positions on the McGill Faculty. The present term at Bishop's will be completed and the arrangements will go into effect for the next session in October.

The Canadian Association for the Prevention of Tuberculosis.—The fifth annual meeting of the Canadian Association for the Prevention of Tuberculosis was held at Ottawa on March 15, the gathering being attended by medical men from various parts of the Dominion of Canada. The annual report of the secretary, the Rev. Dr. Moore, of Ottawa, stated that a large deputation from all parts of the Dominion had waited on the Federal Government, with reference to the establishment of a sanitarium. The Premier had expressed his sympathy with the movement, and later on a resolution had been unanimously adopted by the House of Commons favoring governmental support in combating the disease. One result of this conference was that Dr. P. H. Bryce, chief medical officer for the Department of the Interior, was appointed the convener of a sub-committee, with the object of getting county councils and other public bodies to petition for the establishment of a sanatorium in each province, hoping, of course, for some help from the Dominion Government, and the response to this movement has been very gratifying. Twenty-four petitions have come from British Columbia alone. During the past year there were admitted to the association the British Columbia branch and the Association of Colchester, N. S. Literature was freely distributed to the extent of 785,000 leaves. In the evening, Prof. J. George Adami, of McGill University, delivered a lecture, at which His Excellency the Governor-General presided. The title of the lecture was "Adaptation and Consumption."

GENERAL.

Appointment of Dr. Dearborn.—George V. N. Dearborn, A.M. (Harvard), M.D., Ph.D. (Columbia), has been elected to the Professorship of Physiology in the Tufts College Medical and Dental Schools, Boston. More than six hundred students of both sexes are in attendance at these schools.

The Anti-Tuberculosis Movement in Youngstown and Grand Rapids.—The progress of a tuberculosis movement in Youngstown, Ohio, is described in a recent issue of *Charities*. Still another sign of the activity in this field comes from Grand Rapids, Michigan. After a quiet canvassing of the situation in that city, plans for the organization of an anti-tuberculosis society were laid, and on March 3 Dr. Victor C. Vaughan, of the University of Michigan, delivered by invitation a public address on the disease and the methods of combating it to a large and representative audience. Immediately following his lecture the formal movement was launched, a constitution and by-laws adopted, and about a hundred of the leading citizens of Grand Rapids handed in their names as members of the new society. The dues have been placed at one dollar a year, and new members are being added daily. A second meeting for the election of officers has been called, and the work is being pushed with enthusiasm.

The Dangers of Car Dust.—The popular interest displayed in the subject of car sanitation and car ventilation by the Boards of Health of the larger cities has evoked some criticism of the railroad companies for not giving more attention to a matter of such vital interest to their passengers. The laboratory of the Marine Hospital Service has been investigating this subject for some time. Dr. Walter Wyman, Surgeon-General of the Marine Hospital Service, says: "Just how much danger there is of contagion through vitiated air in the ordinary day coach now in use, or in the Pullman sleeping and palace cars, has not yet been definitely determined, and the matter is still being investigated. Information collected points to the State of Texas as having been the pioneer in this movement, due doubtless to its excellent railroad commission. It is held that there is much danger to the passengers of contracting contagious diseases from the fine dust arising from the carpets and upholstery while the

cars are in motion, and which imperfect ventilation compels the passengers to inhale."

The Medical Corps of the United States Navy.—A candidate for examination and appointment in the Medical Corps of the Navy must be between twenty-one and thirty years of age, and must apply to the Honorable Secretary of the Navy for permission to appear before a Naval Medical Examining Board. The application must be in the handwriting of the applicant, stating age and place of birth; also the place and State of which he is a permanent resident, and must be accompanied by letters or certificates from persons of repute, testifying from personal knowledge to his good habits and moral character, and that he is a citizen of the United States. Such applications can be obtained by writing to Washington. When a candidate presents himself for examination on the date fixed by the president of the Board, he must bring with him testimonials as to character and professional fitness, diplomas, and a certificate that he is a citizen of the United States. While it is desirable that candidates should be graduates in medicine, such graduation is not essential. The examination usually occupies about nine days, and is conducted in the following order: 1. Physical. 2. Professional. 3. Collateral.

Physical Examination.—The physical examination is thorough, and the candidate is required to certify on oath that he is free from all mental, physical, and constitutional defects. Acuteness of vision, 12-20 for each eye, unaided by glasses, but capable of correction, by aid of lenses, to 20-20, is obligatory. Color perception must be normal and the teeth good. If the candidate is found to be physically disqualified his examination is concluded; if found to be physically qualified his examination is continued as follows: (1) Letter to the Board describing in detail his general and professional education. The professional examination will be in anatomy and physiology; surgery; medicine; pathology and microscopy; obstetrics and medical jurisprudence; materia medica and physiological action of drugs; chemistry and physics; hygiene and quarantine; general aptitude; literary and scientific branches. Seventy-five per cent. is required as a passing mark, 80 per cent. is required in most of the branches. Bandaging, tourniquets; four operations on cadaver; clinical cases (a written report being made in one case giving history, diagnosis, prognosis, treatment, one prescription, at least, being written out in full, in Latin) urinalysis (chemical and microscopical examination of one specimen of urine); practical microscopy, and recognition of five mounted specimens (histological, pathological, and bacteriological); recognition of surgical instruments. An oral examination follows the written work in each branch, and the required percentage is made up from the combined results of the written and oral examinations. The percentages given are not absolute, however, as losses in some branches may be made good in others, provided the standard is reached in the cardinal subjects of anatomy, physiology, medicine and surgery. The collateral examination embraces spelling, punctuation, the use of capital letters, grammar, arithmetic, geography (descriptive and physical), languages, history, general literature, elementary botany, geology and zoology. While due credit is given for a knowledge of languages and the sciences it is not essential except in the case of physics. A knowledge of the common school branches is essential, and deficiency in this respect will cause rejection even though passing marks may be gained in professional subjects. The Boards are required, under oath, to report on the physical, mental, moral, and professional qualifications of the candidate, so that the examinations are necessarily rigid and comprehensive, though simple and practical, and not beyond the attainments of any well educated physician. The oral and written questions are similar to those asked by the best medical colleges in examinations for graduation. A successful candidate, upon completion of his examination, will be notified by the president of the Board that he has been found qualified. With the consent of the Board, a candidate may withdraw at any period from further examination, and may at a future time present himself for reexamination. The Board may conclude the examination (written, oral and practical) at any time, and may deviate from this general plan as it may deem best for the interests of the naval service. The tenure of office in the Medical Corps of the Navy is for life, unless sooner terminated by removal, resignation, disability, or other casualty. No allowance will be made for the expenses of persons undergoing examination. All successful candidates will receive appointments as soon as qualified, and in the order of merit reported by the Board. The Officers of the Medical Corps of the Navy are as follows: Medical directors, medical inspectors, surgeons, passed assistant surgeons, and assistant surgeons. Vacancies in these grades (by death, or retirement at the age of 62 years) are filled in the order of seniority, and for each promotion a physical and a professional examination is required by law. Assistant surgeons are examined at the expiration of three years' service for promotion, and if successful become passed assistant surgeons. Through the provisions of a law enacted by the Fifty-seventh Congress, the Medical Corps of the Navy was increased 150 numbers; 25 to be appointed each calendar year for six years. The number of vacancies occurring through retirements, resignations, and casualties average about 10 a year. There are afforded, therefore, for candidates for the position of assistant surgeon about 35 appointments each year for the next six years.

The pay table is as follows:

	At Sea.	On Shore.	Allowances Per annum.
Assistant Surgeons, rank of Lieutenant (junior grade)	$1,760.00	$1,496.00	$288.00
Passed Assistant Surgeons, rank of Lieutenant	2,200.00	1,870.00	432.00
After five years in the service	2,400.00	2,040.00	432.00
After ten years in the service	2,600.00	2,210.00	432.00
Surgeons, rank of Lieutenant Commander—			
After ten years in the service	3,250.00	2,762.50	576.00
After fifteen years in the service	3,500.00	2,975.00	576.00
Medical Inspectors, rank of Commander—			
After fifteen years in the service	4,000.00	3,400.00	576.00
Medical Directors, rank of Captain—			
After fifteen years in the service	4,500.00	3,825.00	720.00
Surgeon General, rank of Rear Admiral	5,500.00	5,500.00	720.00

Manuel Garcia Celebration.—Professor Manuel Garcia's hundredth birthday was celebrated in London last Friday by the presentation of a portrait and a banquet. The presentation took place at noon at the rooms of the London Laryngological Society, in the presence of representatives of kings and emperors, delegates of the world's greatest scientific and musical bodies, and some of the most notable personages of the age. Sir Felix Semon, C.V.O.,

chairman of the Garcia Committee, presided. Seated in a big arm chair on a platform the veteran musician and inventor of the laryngoscope, Professor Garcia, wearing his newly conferred orders, listened with evident pleasurable attention to the reading of addresses and telegrams from all parts of the globe. King Edward had made him Honorable Commander of the Royal Victorian Order. Emperor William had sent him by Professor Fraenkel the greatest distinction conferred in Germany, namely, a large gold medal for science, and his own sovereign, the King of Spain, had invested him with the Royal Order of Alfonso, at the same time congratulating him through his Charge d'Affaires, the Marquis de Villalobar, on behalf of himself and all his subjects. Professor Fraenkel, in a message from the Berlin Laryngological Society, congratulated the master on his entry into "the second century of his immortality." From noon until one o'clock messages and addresses were read in turn by representatives of the Royal Society of London, the Prussian Academy of Science, the Universities of Heidelberg, Königsberg and Manchester, numerous laryngological societies all over the world and the New York Academy of Medicine. In the address of the latter Dr. Harmon Smith, referring to Professor Garcia's invention of the laryngoscope, said that in New York alone fully thirty institutions relieved the suffering needs of countless thousands and that New York joined with all the world in testifying to the mighty debt which it owed to Professor Garcia, to whom it offered a tribute of its love, its gratitude and its praise. Sir Felix Semon, after reading out the telegrams of congratulation, made one remark which evoked immense applause. It was to the effect that, notwithstanding the disastrous war which was now raging between two countries, each of those said countries had taken good care to send messages of congratulation to Professor Garcia. The centenary committee then came forward and presented to Señor Garcia a portrait of himself by Mr. John S. Sargent, R. A., subscribed for by international contributions of numerous friends and admirers. Sir Felix Semon pulled aside a curtain and disclosed to view the Royal Academician's portrait, which represents Professor Garcia seated and half turned toward the right. At a banquet, which was held in the Hotel Cecil in the evening, Mr. Charters J. Symonds presided over a distinguished gathering of more than four hundred ladies and gentlemen. The menu was an elaborate and artistic production, bound with ribbons of the Spanish colors, a Spanish flag surmounting two photographs of Garcia, one of him taken a day or two ago, the other showing him as he was at the time of the invention of the laryngoscope. The chairman, in proposing the toast of the King, said that he had sitting on his right Lord Suffield, whom King Edward had sent to represent him on this occasion, a tribute from His Majesty which was greater than any of them had expected, for Lord Suffield was not one of the King's younger staff, but one with whom he had long had intimate acquaintance. The toast having been pledged, Mr. Symonds remained standing. He said his reason for doing so was that he wished to propose the health of two other sovereigns who had done honor to Professor Garcia, namely, the King of Spain and Emperor William of Germany.

He called upon the Marquis de Villalobar to read a telegram which had just been received from the King of Spain, which contained the heartiest congratulations and best wishes to the "grand old Spaniard, who, by his invention, had glorified and exalted the Kingdom of Spain." Great cheering greeted the reading of this telegram, and the chairman then went on to say he believed the honor which the King of Spain had conferred on Señor Garcia carried with it the title of "His Excellency." Therefore, they would be able to address him in the future as "Your Excellency, Señor Garcia," a remark which again evoked enthusiastic cheering. Sir Felix Semon next rose and proposed the toast of the evening, that of the health of Señor Garcia, which he began by reverently addressing the centenarian as "My great and revered master." "It was," he said, "a solemn and most inspiring occasion upon which they were met to do honor to a many of eminence, a man who was born when the might of Napoleon was at its height, and who at the age of one hundred still retained all his mental and physical faculties; a blessing given to few. It was remarkable, also, that two professions, which had little or no points of contact, should be met to lay tribute at the feet of this great centenarian. He came of a family which would be indissolubly connected with music as long as there was any history of music, a family which had done inestimable work in the noble art of music, and Señor Garcia had, as a teacher of many distinguished singers, engraved his name forever on the roll of music teachers. He had created a school of singers who would ever cultivate the methods he had founded. But he had even greater claims upon the gratitude of mankind by his great invention of the laryngoscope, and that was why so many eminent members of the medical profession and of surgery were present on that occasion to lay a tribute of gratitude and congratulation at his feet."

Señor Garcia, who was received with most enthusiastic cheers, was visibly moved, and after reading a few words of a speech in a trembling voice left the chairman to complete it, but the chairman apologized, saying that it was impossible for him to give these words such expression as had already come from the soul of the great centenarian. Sixteen societies, said Señor Garcia, called him "Father." "How," he asked, "could they expect him to find words to express his gratitude and to answer so many voices which called him 'Father.'" He asked those assembled "to try and think themselves one hundred years old—not the leaders, for they would never look it; they would never know it and no one would ever believe it—but the men might try, and he was sure that if they tried to answer these clamorous voices to which he had alluded they would say nought." Señor Garcia's little speech was greeted with prolonged cheering, which was renewed when he rose to leave. In fact, the scene of enthusiasm was almost indescribable. Professor Garcia, who was born in Madrid, Spain, March 17, 1805, was the son of Manuel Garcia, a famous Spanish tenor. His sister, Mme. Malibran, a celebrated opera singer, accompanied Señor Garcia to the United States in 1825, and later sang with great success in Paris, London and other cities. Mme. Viardot-Garcia, a younger sister of Professor Garcia, was also a celebrated singer. She married the late Louis Viardot, Director of the Paris Italian Opera, and retired from the stage in 1862.

Patent Medicine Advertisements Forbidden.—A new law forbids the publication in Norwegian news-

papers of advertisements to further the sale of any and all foreign patent medicines.

Medicine in England.—Sir James Paget has followed up the lives of 1,000 medical students who had joined the medical school of St. Bartholomew's Hospital, with the following result: 23 met with distinguished success, 66 met with considerable success, 507 met with fair success, 124 met with very limited success, 56 failed, 96 discontinued medical studies while in pupilage, 41 died during pupilage, and 87 died within twelve years of commencing practice.

SPECIAL ARTICLE.

BYWAYS OF MEDICAL LITERATURE.—XXIV.

THE INCREASE OF QUACKERY.

From the information available gleaned from public and private sources, says an editorial writer in the February *Medical Magazine*, it would seem as though the practice of quackery was never so rife in England as at the present time. The country, and London in particular, is swarming with charlatans. There is hardly any disease, or class of diseases, which is left unexploited by this locust brood, and the cures range from faith healing and black magic to comparatively innocuous decoctions of "herbs." Of course the quacks could not flourish unless they were patronized by the public, and notwithstanding the advance of education and scientific education, the British public at the present day is quite as credulous in this respect as in the days of Queen Anne. To take an instance of the sort of stuff people will believe, one may turn to a recent number of the *Onlooker* in which a special article is devoted to the laudation of "a New Science." This new "Science" is called "Osteopathy." It is of American importation and gives the name and address of the practitioner who has come over from America because the American residents here "refused to be in London without him." Now what is this new "Science?" It is that "all pain and all disease come from pressure—pressure in the nerves or on the blood vessels by the dense tissues of the body, thereby obstructing the proper circulation of the blood and transmission of nerve force. Therefore the first thing an osteopathist does is to find out whether in the whole body there is the tiniest part dislocated or out of place, any muscle contracted, or blood-vessel pressed upon. To do this, he does not at first attend to the part of the body which is affected—he knows that the trouble will set up a corresponding irritation in the governing nerve centers of the spinal column. He therefore feels with educated fingers down the thirty-one nerve centers which are there, until he comes to the one which is functually deranged; and then, having localized the evil, he follows the course of the nerve till he comes to the place where the obstruction is, when he at once sets to work to remove it and set the blood freely circulating again. He treats successfully many of the dread complaints to which humanity is liable, some of which have been hitherto regarded as almost, if not quite, incurable, such as spinal curvature, incipient consumption, Bright's disease, diabetes, asthma, goiter, locomotor ataxia and paralysis." When one reads this paragraph one wonders how any man alive could pen such insane jargon; how the imagination of any one could run to such a grave excess of riot, so to speak. But underneath all this there is, to the lay individual, a ring of simplicity and effectiveness about the whole thing, and no doubt the particular exponent of this balderdash will attract numerous clients and extort handsome fees. London, in particular, as has been said, is honeycombed to-day with these miscreants. In older days, before the dawn of exact science, a large number of the so-called quacks were in reality honest men, who believed themselves possessed of special powers, and at that time nearly all practitioners dabbled in secret nostrums of their own, but at the present time the honest quack is practically non-existent, because, however small the smattering of science which he possesses, it is sufficient to enlighten him as to his ignorance.

SOME QUACKS OF BYGONE DAYS.

It may be of interest to quote some remarks from a lecture delivered by Dr. Packard, of Philadelphia, to the Johns Hopkins Hospital Historical Club, on some of the most famous quacks of bygone times. He remarks that during the period of the Restoration especially, submission to the royal touch as a cure became very popular as a manifestation of loyalty. Another circumstance which contributed to maintain the royal touch in popular estimation was the fact that it was always accompanied by the gift of a gold piece to the patient from his sovereign. These were known as "touchpieces." It is interesting in this connection to recall that Dr. Samuel Johnson, the great lexicographer, was among those touched for this complaint by Queen Anne, the last of England's royalties to attempt the exercise of this healing faculty.

VALENTINE GREATRAKES.

In twenty-two years a careful list was kept of those of his subjects whom Charles II. touched for King's Evil, and their number amounted to over 92,000. There were, however, other claimants to the healing touch besides those of royal birth, among whom Valentine Greatrakes achieved a remarkable fame. He was born in County Waterford in the reign of Charles I., and after an ordinary school education entered Trinity College, Dublin, from which place he did not graduate, as, owing to the Rebellion, his mother fled from Ireland into England, where he lived in Devonshire and studied theology and philosophy under a German minister, the Reverend John Daniel Getsius. About the year 1624 he returned to Ireland. He was possessed of property, and was evidently held in some esteem for he became a justice of the peace and registrar for plantations.

How this quiet, contemplative, well-to-do country gentleman ever became possessed with the idea that he was gifted with the ability to heal disease by the touch of his hand will never be known. In 1662, however, he claimed to have discovered his supernatural gift, although for some time it appears he kept his virtue to himself, but at last, like the good man that he was, told his wife, who unkindly laughed at him. Nothing daunted, however, he began laying his hands upon various people in the neighborhood who suffered from scrofula or other diseases, and is said to have cured very many of them. These doings made such a noise, however, that they came to the ears of the authorities, and the Bishop's Court at Lismore prohibited him from laying on hands in the future. He seems to have disobeyed the court's injunctions. As is the case with so many quacks, he soon found titled victims. In January, 1665-66, the Earl of Orrery brought him over to England in order that he might lay his hands upon the wife of Lord Conway, who suffered from chronic headaches. Although he was unsuccessful with this patient, he, nevertheless, seems to have performed cures in a number of persons that lived in her neighborhood, so much so that an account of his cures in Warwickshire was published by a Mr. Stubbe in which he stated "that

Mr. Greatrakes was possessed of some peculiar temperament, as his body was composed of some particular ferments, the effluvia whereof being introduced, sometimes by a light, sometimes by a violent friction, restore the temperament of the debilitated parts, regenerate the blood, and dissipate the heterogeneous ferments out of the bodies of the diseased, by the eyes, nose, mouth, hands and feet." Stubbe's account was written in the form of a letter to the famous Robert Boyle, Esq. The latter was extremely put out at being made party to what he was at first disposed to regard as the performances of a quack, but *mirabile dictu*, after witnessing some eight laying on of hands, even the great Boyle succumbed, and publicly announced that he could vouch for some of the wonderful results achieved by the healer. This English visit marked the climax of Greatrake's career. He made large sums of money, but within a few years his fame declined as rapidly as it had risen, and he died in obscurity. Queen Anne's poor eyesight rendered her a godsend to quack ophthalmologists. Two of these rascals the queen especially delighted to honor. One was a tailor named William Reade whom she knighted. The other was a shoemaker named Roger Grant. He was made oculist to the queen by special appointment. The champion quack ophthalmologist of the eighteenth century, however, was undoubtedly the Chevalier John Taylor. Dr. Brown Pusey, of Chicago, has recently published an account of his career founded upon his biography, which was published in London in 1761, with the following title: "The Life and Extraordinary History of the Chevalier, John Taylor, Ophthalmiator, Pontifical, Imperial and Royal; in two volumes; written from authentic materials and published by his son, John Taylor, Oculist; London, 1761." Dr. Pusey truly says, "in comparison with him the quacks of the present day are a cheap lot.' Dr. Pusey gives extracts from the hand-bills which it was his wont to distribute, and their glowing eloquence puts to shame all modern imitators. In the course of his book he narrated the tremendous distances he had traveled and the vast experience he had had. He was appointed Ophthalmiator Pontifical by Pope Benedict XIV., and was appointed oculist to George II., King of England; Augustus III., King of Poland; Frederick V., King of Denmark and Norway, and Frederick Adolphus, King of Sweden. As Dr. Pusey says, one of his important cases was in the person of a man who seems nearer to us than all these high personages, namely Händel, of whom he says, "I once thought to have had the same succes, having all circumstances in his favor, motions of the pupil, light, etc., but on drawing the curtain, we found the bottom defective."

AN EARLY SECRET REMEDY.

In a different category we must place Dr. Jonathan Goddard, the originator of "Goddard's Drops." We seldom realize nowadays when we prescribe aromatic spirits of ammonia that they were originally famous as a secret preparation known by the name of "Goddard's Drops." They were originated by Dr. Jonathan Goddard, a Fellow of the Royal Society, and Professor of Medicine in Gresham College. Dr. Goddard had a large practice, and was a professional adviser as well as an intimate friend of Oliver Cromwell. He had a laboratory in Gresham College, in which he manufactured various medicinal preparations, of which the drops became the most famous. He for some time kept their manufacture a secret, and sold them through apothecaries, but as this was contrary to his oath to the College of Physicians, he was obliged to reveal his secret to them, but only did so upon their promise that the recipe should not be published until after his death. They were at first known as spiritus salis volatalis oleosus, or sal volatile drops. In "Doctors and Doctors," by Graham Everitt, there is a quotation from the Sloane MSS. 958, in which there is an entry, in a memorandum book, in the handwriting of John Coniers, an apothecary of Shoe Lane, which reads as follows:

"March 24, 1674-5. About ten o'clock that night my very good friend, Dr. Jonathan Goddard, reader of the physic lectures at Gresham College, suddenly fell down dead in the street, as he was entering a coach. He was a pretty corpulent and tall man, a bachelor between forty-five and fifty years of age; he was melancholy, inclined to be cynical, and used now and then to complain of giddiness in his head. He was an excellent mathematician, and some time physician to Oliver the Protector."

SPOT WARD.

Another substance which is now in general use, but of which the nature was at first kept secret by its inventor, is oil of vitriol or oil of sulphur. Joshua Ward, its discoverer, derived his nickname "Spot" Ward from a facial blemish. He was originally a chemist, and in the course of his work discovered a method of making oil of sulphur by the combustion of sulphur with saltpeter, the resulting compound being so cheap in its manufacture that it soon completely supplanted the real oil of vitriol in the market. Ward was a thoroughgoing quack, and employed every precaution to prevent the discovery of the nature of the substance which he used. He was a large, fat man, and used to drive around in a magnificent chariot drawn by four horses. He was high in the favor of George II., who provided him with a sort of dispensary and office in White Hall, at which he attended the poor and gave them his medicines for nothing at the expense of the king. Upon one occasion, when he had been paying a professional visit to his majesty, he turned his back on the king on leaving the room and started for the door. A court officer stepped forward and reminded him in a whisper that he should not turn his back on the king, to which he replied in a loud voice, "The king's seeing of my back is a matter of no consequence, but the breaking of my neck falling backwards is of consequence not only to him but to the poor."

Lady Mary W. Montague refers to Ward's preparation in a letter of 1748, and adds to it one of her usual keen reflections. "I find," she says, "that tar-water has succeeded to Ward's drops; and it is possible that some other form of quackery has by this time taken place of that. The English are, more than any other nation, infatuated by the prospect of universal medicine."

JOHN ST. JOHN LONG.

John St. John Long deserves to be ranked among the most successful quacks of all time. From his practice he is said to have derived an income of over £13,000 a year, and unfortunately for him, death terminated his career at a time when many victims cherished a belief that he was the greatest of healers. He was the son of a poor Irish peasant, and passed his youth in the village of Doneraile. He was possessed of a natural talent for drawing and painting, and after passing a short time in Dublin in the cultivation of these gifts, he established himself as an artist in Limerick. Here he painted portraits and gave instructions in painting and drawing to such pupils as he could procure. Finding the village of Limerick somewhat limited as a sphere for his activity, Long migrated to London where

he worked for some time in the studio of Sir Thomas Lawrence. During this time he turned a few honest shillings by making anatomical drawings and paintings for the professors in the London medical schools. In the course of his work he picked up some crumbs of medical knowledge, and soon announced that he had discovered a wonderful liniment, by means of which he was not only able to cure most diseases, but also to discover the existence of latent disease in various organs. If, for example, this substance were applied over the chest of any person if they were healthy, and if there was no phthisical or other affection of the lungs, the application would be absolutely void of result. If, however, the lungs were in any way diseased, the substance would produce a counter-irritation resulting in the formation of a weeping sore. The acrid substance which flowed from this Long said was the essence of the disease. His enemies claimed that he used two distinct fluids to effect this wonderful result, one a bland and innoxious substance, the other a blistering liquid, which originally bore the name of St. John Long's liniment.

He also had a remedy in the form of vapor which was to be inhaled. For this purpose his patients would seat themselves around a large cabinet from which radiated a number of stems through which they inhaled the vapor. Long fitted up magnificent offices in a mansion in Harley street, and here the aristocracy flocked in swarms to inhale and to be rubbed. The list of Long's patients reads like a directory to the fashionable quarter of London. But not only was he patronized by the citizens of the metropolis, but the sick and the foolish flocked from every quarter of the United Kingdom. The contemporary accounts of some of the scenes in Long's offices, whether written by his friends or his enemies, are most amusing. It was only possible for him to see patients for a few moments, and he would turn them over to one of his assistants, or else send them into the inhalation room to join the other patients sucking the miraculous vapor through Long's tubes.

One way in which he enormously increased his practice was to persuade healthy persons that he saw indications of latent disease within their systems, which could be demonstrated by an application of his wonderful liniment. As most of his patients were accompanied by various female relatives and friends on their visits to his office it was very easy for Long to cast his net about the healthy while bestowing his professional attentions upon the sick. This trick, however, did not always pay as the sequel will show.

On Saturday, October 30, 1830, Long was brought to trial at the Old Bailey, charged with manslaughter in occasioning the death of Catherine Cashin. He pleaded not guilty to the indictment. The facts elicited at his trial were as follows:

"Miss Catherine Cashin was a young lady of good family in Ireland who had brought her younger sister up to London to be treated for phthisis. The elder sister, at the time of her arrival in London, was in perfect health. She had taken her sister a few times to Long's house, when the quack announced that he had discovered signs in her of latent consumption, and that if she did not put herself promptly under his care she would develop the disease within two months. This frightened the young woman to such an extent that she agreed to place herself in his hands. Accordingly, on August 3 she went to his offices and was rubbed with the famous liniment between her shoulders and on her back. Within a short time the parts began to ulcerate and become gangrenous and she died on the 17th of the month. Before her death Mr., afterward Sir Benjamin Brodie, was called in, and at the trial he gave it as his opinion that her death was the result of the mortified sore upon her back. At the autopsy there was no evidence of any disease of the organs, save the large sloughing sore between the woman's shoulders. The woman employee of Long, who performed the actual rubbing on Miss Cashin's back, testified that she had rubbed the woman with the same lotion that had been used on a number of other persons, among them the Marchioness of Ormonde and Lady Harriet Butler. The wound was dressed with a cabbage leaf, and treated in a precisely similar manner to that of the other patients. A number of witnesses were called in behalf of the prisoner, among them some of the best known people and of the very highest social standing in London. The judge's charge was strongly in favor of the prisoner, though the jury found him guilty. His punishment, however, was not excessive, as he was fined only £250, which sum he pulled from his pocket in the courtroom." The account of the trial concludes, "having quitted the bar, he proceeded to the courtyard in company with his friends, where they got into a curricle of the Marquis of Sligo and rode off with his lordship amidst the clapping of his noble friends, and the hootings and hissing and laughter of the populace."

On November 10, 1830, Long was again brought before a coroner's jury, accused of manslaughter in having caused the death of Mrs. Colin Campbell Lloyd, the wife of a captain in the navy. Her medical attendant and surgeon, named George Vance, stated that he had been called in to see Mrs. Lloyd, and found her suffering from a large sloughing sore, covering practically the entire front of her thorax, and extending down so far that the sternum was found bare. She stated that she had been rubbed twice at St. John Long's house with his liniment. Mr. Brodie, who saw her, stated that the appearance of the sore was exactly similar to that which he had found on the back of Miss Cashin. Another surgeon, a Mr. Campbell, testified that he had seen Mrs. Lloyd some days before she had consulted Dr. Long, and that she had been in perfect health. She had visited the quack with a view to procuring relief from a slight throat affection. After examining her, Long had informed her that the throat trouble arose from extensive disease of the lungs, they being full of small ulcers, and recommended his inhalation treatment in addition to applications of his liniment to her chest. Her husband likewise testified that she had been in perfectly good health until after the rubbings at Long's. At the autopsy all Mrs. Lloyd's organs were perfectly normal, and the body showed no signs of disease, with the exception of the enormous sloughing sores over the chest and upper part of the abdomen. The jury found that the deceased had come to her death as the result of the application of a liniment to her chest by Dr. Long. When brought to the trial at the Old Bailey on the charge of having killed Mrs. Lloyd, the jury acquitted him.

In spite of all the expositions of Long's quackery, which were published not only in the medical but in the lay press, he continued to be upheld by a large and influential *clientèle*. His career was terminated at the early age of thirty-seven by phthisis pulmonalis, the very disease to which he had laid his most extravagant claims to cure. At his death it was found that, as a result of his nefarious practice, he had accumulated a snug fortune, which he left to his widow in Ireland. He was buried in Kensal Green Cemetery, and over his grave some of his admirers erected an elegant monument.

If in the twentieth century we are not blessed with quacks as simple as Valentine Greatrakes or as dangerous as St. John Long, it is solely due to the general advance of knowledge, for the quack in all ages accommodates himself to the prevailing tendencies of the time. Touching for king's evil would not pay nowadays, nor would the production of festering sores in order to extract the acrid humors of the blood. The modern quack dabbles in electricity, massage, hypnotism, etc., all methods of cure which have been legitimately or honestly introduced as aids to the healing art. There is nothing in the law, as it stands, to prevent the practice of quackery in any form whatsoever; this is a "free" country, and people may practise without let or hindrance. A tremendous fraud and robbery are being perpetrated on the public. The Government approves of it, the medical profession is apathetic and perhaps powerless; so that at present there seems little chance of effective redress for many a long year to come.

EUGENE SUE AND MEDICINE.

Last December saw the centenary of Eugene Sue, known more particularly as the author of "The Mysteries of Paris" and "The Wandering Jew." The Sues, however, were doctors from father to son, and were all writers of many books. The first of the line published his "Human Anatomy, with Plates," in 1748. His elder son, Pierre, succeeded him as "surgeon of the city of Paris" in 1762, and stuck prudently to his medical last all through the Revolution, turning out dictionaries of surgery, whole books of anecdotes of medicine, post-mortem eulogies of physicians, until his death under the restored Bourbons in 1816. The younger son, Jean Joseph, who was to be father of Eugene, was an army surgeon, and served, like other men of his time, republic and empire and monarchy in turn. He went unharmed through the cruel Russian campaign of Napoleon, and, when the Bourbons came back, became physician of the king's military household. His books —for he, too, wrote many—all had a picturesque and impressionist quality; an example is his treatise on "the pain which follows (not accompanies) beheading by the guillotine!"

Coming from such a stock Eugene Sue properly became a romancer, but not until he had served a varied apprenticeship at the family trade. In his twentieth year, before his medical studies were completed, Eugene Sue was off as ambulance aid on the Spanish campaign of 1823, which was rather an expedition than a war. Then for six years he sailed as ship surgeon to the four quarters of the globe, with very wide-open eyes, as the reality of his descriptions in his outlandish tales show advantageously in comparison with other romancers. In 1827 he came in for sure-enough smells of gunpowder in the attack of the combined French, English and Russian fleets on Turks and Egyptians off the coast of Greece at Navarin.

Eugene Sue was barely twenty-six when he returned to Paris and quit the service of the State. The writing demon already possessed him, and the next year, 1830, he published his first sea novel, "Kenok, the Pirate." The same year his father died, and he came into a fortune which, at that time, was considered enormous, even by men of lofty ideas like Balzac; it was estimated as high as a million of francs! A new revolution came opportunely, and the rich young Sue had his social prominence enhanced by the fact that he had once been attached to the staff of the son of the expelled King Charles X. He drove English fashion along the Boulevard to the admiration of the young generation of "dandies" like Alfred de Musset, who found their gospel of life in Byron.

For five years Eugene Sue turned out his sea stories. They were rattling good so far as the telling went, though often better fitted in detail to the forecastle than to a lady's boudoir. Whatever may be said of his lack of syle, he had the talent of choosing proper names that strike and remain in the memory—"Plick and Plock," "Atar-Gull," "Coucaracha." The name of the house porter Pipelet in his "Mysteries of Paris" has passed into the French language as the nickname of concierge. This period of his writing he finished up with a five-volume octavo history of the French navy under Louis XIV.

As an interlude to this breathless existence of life and literature, such as it was, there is a medical story worth recalling, if only for the dubious light it throws on certain recent revivals. Eugene Sue's first cousin, the son of the musician Langlé, like himself, had begun the study of medicine. He caught a severe cold, which was followed by cough and hemorrhages and fits of suffocation. The other young doctors watched with him, and one set to work to bleed him—a sovereign remedy for congestion in those days. Relief followed, but after quarter of an hour the fits came back worse than ever. The young doctor bled the patient again and yet again, and like results to the eighth time! The results were satisfactory each time, but did not endure. The young men held a consultation, but could not agree. Finally, the same one who had previously operated established a record by a ninth bleeding, which fortunately was successful. It must be added that the young operator shortly abandoned the healing art. He says: "I saw that the nephew of Baron Sue was a vigorous subject!" This amazing doctor became the famous director of the Opera Veron, who did so much for modern pre-Wagner music, from Cherubini, Auber. Halévy and Meyerbeer to Rossini. As to Langlé, he, too, gave up medicine after experiencing such heroic practice of it. With the devouring activity of the Sue family, he succeeded in three other professions—as playwright, singer and undertaker!

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, held November 23, 1904.

The President, Roland G. Curtin, M.D., in the Chair.

Skiagraph of an Old Ununited Fracture of the Scaphoid Bone.—Dr. L. J. Hammond reported the following case: A young medical student had consulted him for a condition of pain in his right wrist, from which he had been suffering for more than two years. There was no tenderness to touch nor any visible signs of inflammation, and it was only when the wrist was abducted that the pain was intense. The condition had been variously diagnosed as rheumatism, sprain, tuberculous periostitis, and tenities. Treatment for these various conditions had given no relief. The X-ray revealed a fracture of the scaphoid bone, the fragments of which were united by a very loose fibrous connection. The interposed fibrous tissue was removed and the fragments of bone wired together. Perfect apposition of the fragments was secured, and they were held together by two small silver wire sutures. There was perfect restoration of all the wrist movements, with entire absence of pain.

An interesting point was the fact that while the

patient recalled having fallen with the hand outstretched and abducted, no immediate symptoms of pain, swelling or ecchymosis were sufficiently pronounced to demand surgical aid. Dr. Hammond said that experience in the surgical out-patients' department of city hospitals showed the frequency of fractures of the bones of the wrist and ankle-joints without recognition. The only treatment, he said, was to secure bony union, which could only be done by securing perfect apposition, either by wiring or any other of the mechanical means for this purpose. Dr. Hammond believed wiring to be by far the most reliable procedure.

Dr. Charles Lester Leonard referred to the obscure character of these fractures, which could be demonstrated in no other way than by the X-ray. This means of diagnosis was particularly valuable in the slight injuries occurring about the joint, the sprains, fractures and chipping of small fragments within the joint, which lead to incapacity of function so important to those depending upon their hands as a means of livelihood. He believes it the duty of the surgeon in injuries about the joints to have X-ray examinations made for the purpose of excluding these fractures, for a negative diagnosis is of much value to the patient in a saving of time and in the immediate institution of the proper treatment.

Typhoid Fever in Philadelphia.—Dr. Randolph Faries, in the consideration of this subject, said that typhoid fever does not exist in Philadelphia in such alarming numbers as the general public is given to believe. The apparently large proportion of the disease in this city he attributed to three conditions: Errors in diagnosis, cases contracted elsewhere, and duplicate cases. He enumerated sixteen diseases which may be mistaken for typhoid fever. No case should be reported to the Board of Health as typhoid fever unless a Widal reaction has been taken, and, in addition, the urine, feces, and catarrhal secretions examined. Especial care should be taken in examining the liver and spleen, in noting the course of the temperature, the nature of the pulse, the amount and kind of stupor, as well as the nervous symptoms present. Stress should be laid upon the blood spots and a blood count should be made. Dr. Faries believes that, with the municipal improvements of cleaner streets, better surface drainage and perfect under drainage, the abolition of cesspools, houses constructed with better scientific ventilation, careful disinfection of everything whereby typhoid may be transmitted, extreme vigilance on the part of the health authorities in reference to impure milk, adulterated foods, impure water, and a constant instruction to the general public in reference to those foods by which typhoid is often contracted, such as raw oysters, lettuce, overripe and unclean fruit, etc., it is reasonable to suppose there will come a time when a very few cases of typhoid fever, if any, will exist in Philadelphia.

Dr. Edward Martin observed that statistics showed a certain amount of transference of typhoid fever from one case to another, and that the reason for reporting the cases, so far as the public health is concerned, is to prevent this direct transference and to take precautions against a local epidemic. In most of the cases of typhoid in the well-to-do, the community is properly protected; but among the cases seen by the corps of assistants to the Bureau of Health, the importance of a report is very great. The Bureau would rather have a report of a case which is not typhoid and look it up, than to have the case unreported and a possible spread of the contagion. The question of the disinfection of the dejecta he regards as a difficult one to overcome, and thinks we should not be indifferent to the people who get water below our pollutions. In the walking cases the urinary secretions may remain for a week a prolific source of infection. The Bureau of Health has made a statistical study of wells and cesspools and have been astonished to find upward of one hundred in such juxtaposition that the water must be infected. He regards the water supply as the main source of infection, and feels that Philadelphia will still be a typhoid-cursed city until it has a filtered water supply.

Dr. Faires, in closing the discussion, said that many of the cases were reported too quickly, but that the remedy was difficult, since the assistant inspectors of the health department were not allowed to interfere with the family physician. It was, therefore, manifestly the duty of the family physician to be especially careful in his diagnosis. While it is possible to ascertain the exact number of cases outside of the city, and the duplicate cases, it was not possible to estimate those cases of error in diagnosis.

Case of Trachoma Successfully Treated with the X-ray.—Drs. W. S. Newcomet and J. P. Krall reported this case and exhibited the patient, a girl of eighteen years. She had been subjected to all the operations for the cure of the condition, but without success. Treatment was begun in July, 1903, and continued until the first of the year. The inflammatory reaction was so intense that it was thought better to abandon the treatment. Later, however, it was found that she could count fingers at close range. The cornea of the eye was entirely clear and only with special illumination could there be seen fine blood vessels. The eye not treated with the X-ray showed all the symptoms that the treated eye formerly exhibited. The condition of the patient had been present since infancy, and she had been unable to see across the room. Treatment was given every other day for five minutes for about six weeks when the burn developed and treatment was withheld. The result, Dr. Newcomet believed, was due to the accidental burn produced in the course of treatment.

Dr. Jay F. Schamberg referred to a case of trachoma seen in the Polyclinic Hospital, less pronounced than the case exhibited, in the vascular injection of the cornea, but having a tremendous growth of vegetative excrescences uopn the conjunctivæ. The man had received about twenty treatments. The growths have almost entirely disappeared in both eyes and the conjunctivæ were fast approaching a normal condition. In technic, the eye was exposed by means of a clamp, the upper lid was everted and the clamps held by weights.

Dr. George E. Pfahler referred to the paper of Dr. Mayo, of London, and his results in treatment of trachoma by the X-ray, and especially to the value of the method in clearing up the cornea. He did not understand that any burns had been produced in the case of Dr. Mayo. The face at first was covered with a mask, but later no precautions were taken. The tube, a soft one, was placed at about nine inches from the patient, and the treatments were from three to five minutes in length. Personally, Dr. Pfahler had had no experience with the method.

Dr. Charles Lester Leonard regarded the case of much interest, both from the aspect of the ophthalmologist and from that of the X-ray worker. The condition still present in one eye, which had been symptomatically cured in the other, he thought showed a marked illustration of the possibilities of the X-ray in chronic conditions about the eye. The value of the method, he believes, depends not upon the production of a burn, but upon a specific action of the X-ray upon the autolytic ferments contained within the cells themselves. The X-ray, he stated, is not a cure-all, but an agency which assists nature by stimulating to action the self-contained elements within the cells.

Dr. M. K. Kassabian agreed with Dr. Leonard regarding the stimulating and irritating action of the X-rays upon the tissues, but believed further that there was a germicidal or inhibitory action upon the germ. In technic, he covers the Crookes' tubes with a dark cloth and darkens the room—preventing injury to the patient from the light because of the excessive photophobia. He attaches the everted eyelids by adhesive plaster to the forehead. He had four cases in the Philadelphia Hospital, two acute and two chronic. The acute cases had severe photophobia and lacrimation and were improved after four or five exposures.

Dr. Newcomet, in closing, said that he had been impressed, when in London, with what might be called the carelessness with which the cases there were treated; one-half of the men used little or no protection in the treatment, and one man used only wet gauze. In the treatment Dr. Newcomet uses a shield, and as much as possible avoids handling the cases.

Stated Meeting, held December 14, 1904.

The President, Roland G. Curtin, M.D., in the Chair.

Differential Diagnosis and Treatment of Acute Pelvic Peritonitis Associated with Gonorrheal Salpingitis.—Dr. Brooke M. Anspach in this paper drew attention to the fact that while acute pelvic peritonitis of gonorrheal origin is best treated expectantly during the acute stage, it occasionally bears a close resemblance to acute appendicitis in which the expectant plan of treatment would be dangerous. The diagnosis is based largely upon the mode of onset, the history of the patient, and the presence of gonorrhea. Bimanual palpation in an initial attack of acute pelvic peritonitis due to the gonococcus must be and is often negative. This obtains because of rigidity of the abdominal walls, and the slight structural change found early in these cases. After rest in bed, the use of salines and hot applications to the abdominal wall, the symptoms subside in from three to ten days. At this time examination is painless, the structural lesions are plainly evident, and operation should be performed. In case the expectant plan fails, and the patient becomes progressively worse, in view of the possibility of general peritonitis, no time should be lost in opening the abdomen. Several cases were given in detail.

Dr. Charles P. Noble, in the discussion, said that increased experience led him to expect less from conservatism in gonorrheal salpingitis than formerly. He agreed with Dr. Anspach in his views regarding operation in acute gonorrheal peritonitis. He recalled having operated twice in the acute stage. In one case the peritonitis was quite diffuse; the patient recovered; in the other there was a large abscess to the left of the sigmoid. This also recovered. One of Dr. Noble's cases, in which the result of conservatism was good, was the case of a young woman who had acquired gonorrhea, and in which peritonitis resulted in an extraperitoneal abscess. He had operated in the acute attack, drained her vaginam, and to his surprise the patient made an excellent recovery. The woman has since been married and has borne children. Unless the patient is a young woman, it is Dr. Noble's rule to take out both tubes, the uterus and ovaries. Dr. Noble stated that he had never seen a patient die of gonorrheal peritonitis.

Dr. John G. Clark said that the reason the gonococcus did not produce general peritonitis was because its chief habitat is the mucous membrane. As quickly as the gonococcus leaves the Fallopian tubes and enters Douglas's cul-de-sac the peritonitis is merely toxic, due to the toxins of the gonococcus. He believed it unwise to operate during an attack of gonorrheal peritonitis. Illustrative of this he cited a case in which the symptoms had increased in severity, and the question arose whether there was simply a gonorrheal peritonitis, or involvement of the tubes and ovaries. Operation was done, the tubes and uterus being removed and the ovaries left. Subsequently the woman developed a large abscess involving the ovary. Opening of the incision and further drainage were necessary. He emphasized the necessity of a close differential diagnosis and the importance of knowing when to wait until the acute attack had passed, and when not to wait but to operate for a more lethal type of infection. For the past few years it has been Dr. Clark's desire to conserve all tissues possible, because the usual individual who contracts gonorrhea is a young woman. He feels that the conservative policy in some instances works splendidly, but in the majority of cases badly.

Dr. Edward Martin said that his experience in this class of cases in recent years had been only as long as was requisite to transfer the patient to the hands of a competent gynecologist, but that in earlier days he had seen a good many of such cases, which had made prompt recovery under conservative treatment of the acute attack.

Dr. Anspach, in closing, called attention to the fact that in a good many of these cases of acute pelvic peritonitis, due to gonorrhea, not much is gained by bimanual dilatation. While all the cases were correctly diagnosed, had he not had the history and seen the associated signs of the gonorrheal infection, he could not have formed much of an opinion.

Significance of Abulic Symptoms in Cases of Mental Disease.—Dr. Robert H. Chase stated that besides hysteria, where it strongly prevails, abulia is common in all forms of nervous and mental disease in which the chief characteristic is a weakening or exhaustion of the mental processes. It is particularly conspicuous in melancholia, dementia præcox, and in the depressive types of general paresis; in some conditions of neurasthenia and psychasthenia; in the intoxication of opium and alcohol; and in the retardation of manic-depressive insanity. He divides it into systematized, localized and general abulia. Under the systematized he gives the abulia of sleep. Among the forms of general abulia was given the intellectual type, in which the trouble lies in a defect of the attention. He spoke of the rôle that attention played in the normal mechanism of the mind; and under the term aprosexia he gave its various defects in disease.

Dr. Charles K. Mills, in the discussion, said he believed papers of this kind of great use, even to those not particularly interested in mental and nervous affections, and that if there were presented to the profession

more frequently the methods of studying the mental symptoms there would be given a better insight to the cases of insanity and cases not so regarded. He considered the subject a large one from the standpoint of the alienist.

On the Advisability of a National Department of Public Health and a Medical Cabinet Officer.—Dr. T. H. Evans said this was suggested by the late Dr. William Pepper. The writer favors it as a means to centralize and render more effective the many interests of the country that are medical. The supervision of education of children, so as to suit individual tastes, needs and abilities, is indicated. Physicians ought to control all matters which concern the physiological welfare of the citizen. The care of criminals, once apprehended by the law, belongs properly to medicine. Colonies for mental and moral degenerates, if established, would materially reduce crime. The physical defects of children should be understood as productive of later immorality, or conducive to it, if suitable education does not intervene. Education and licensing of practitioners of medicine and surgery in the opinion of the author alone belong to a central office, whose executive head should have a place in the cabinet of the President.

Dr. Edward Martin felt that in the main all were in accord with the views of Dr. Evans. The question of education, however, he thought should be a matter of State control. In regard to criminals he thought the matter of imprisonment not so much one of punishment as of protection for the rest of the community, and that too much leniency has been allowed on a basis of mental defect. The idea of centralization he thinks is applicable to the subjects of sanitation and prophylaxis, particularly against contagious diseases, and in regard to such general subjects as water pollution. The establishment of a National board, he thought, was hoped for by all physicians.

Dr. Charles K. Mills believed that much could be accomplished by the establishment of a central health department of some description. It is, however, a question more difficult of solution than would seem to physicians, who have only the physicians' side of the subject before them. Personally he would be very glad to see the medical profession represented in the Cabinet, and believed much good might come from such movement. It might, however, be better if a department of science were created with bureaus of different sort, including a National Bureau of Health, which would take cognizance of matter of this sort. The great advantage of such an office would be the unifying of methods of procedure concerning matters of health in all parts of the country. With such a national organization much might be accomplished in matters of quarantine, the pollution of rivers, the registration and examination of physicians, and such questions as physicians have the first right to consider. Those who have committed crime should, if their mental and physical health is a matter of question, receive that attention which is often not given to them both before and after trial and after conviction. Such questions as the care of the insane, the care of epileptics, the commission of crime by the young would receive the more humane attention, if there were some method of regulating their consideration, and if that method were, in part at least, national and centralized.

Dr. William S. Wadsworth thought it appropriate that the Philadelphia County Medical Society should recognize the needs of the community for a larger, broader and more intelligent handling of State medicine. He thought it not possible for men unversed in medical science to take care of the lives of human beings. Various questions which should come under the head of such a national executive department, mentioned by Dr. Wadsworth, are the adulteration of foods, the study of sewage, the protection of life on railroads and in factories, child labor, the importation of hides and such materials, the quality of drugs, and patent medicines. He regards as highly desirable the presence of a medical man in the Cabinet.

Stated Meeting, held December 28, 1904.

Vice-President B. Franklin Stahl, M.D., in the Chair.

Food-Preservatives and Food Adulteration.—Dr. H. W. Wiley, Chief of the Bureau of Chemistry of the United States Department of Agriculture (by invitation) read a paper on this subject. He said that the necessity of preserving food in some way had been recognized since man emerged from his savage state. The development of the science of chemistry had placed in the hands of the manufacturer the means of preserving food before unknown and the means of matching foods in tints and colors. He believes that the education of the public in regard to artificial coloring of foods to be quite as effective as legislation. After the 2d of February he said the food law would require that all food products entering this country artificially colored should bear a label so stating. The material for coloring need not be declared, except in the one case of sulphate of copper. His advice to food makers is to cease using colors, and especially if the coloring is under suspicion of any kind. Concerning antiseptics in relation to foods, he thinks the rights of the consumer are paramount. He believes that there never should be an antiseptic admitted to foods, except when absolutely necessary, unless the consumer orders it for himself. There is, he thinks, a legitimate use of sulphurous acid, as employed in the fumigation of dried fruits, and the burning of the sulphur match in wine barrels which method has come down from antiquity, but when it is used as at the present time in enormous excess for preserving a poor wine and putting on the market a new wine before it is ripened, he declares its use to be unpardonable. He believes that the application of the principle of honesty would cover all the needs of a food law. Were Dr. Wiley to write a food law it would require that every food product be marked and be exactly what it was said to be.

Defects in Pennsylvania Food Legislation.—William W. Smithers, Esq. (by invitation) read a paper by this title. He said that the laws upon this subject now being enforced in Pennsylvania are not the expression of the wishes of the people, and that they result in unnecessary interference with manufacturers and merchants. He advocated the repeal of the Act of 1895 and the enactment of laws based upon the preservation of health and protection against fraud. He stated his belief that the office of Dairy and Food Commissioner was unconstitutional; that the existing food statutes are imperfect and open to many just complaints, and declared that every effort should be made to secure reasonable and adequate legislation upon this important subject.

Evaluation of Evidence as to the Pharmacologic Action of Food Preservatives.—Dr. Thomas L. Coley stated that as an economic principle it is apparent that a nation of eighty million people could not be fed from the farm to the table or from the local abattoir to the table, and there arises the complex problem of transportation of food in an edible condition. The

use of chemical preservatives therefore becomes a necessity. Dr. Coley went over the grounds upon which these are used and reviewed the chief objections against their use. The dangers arising from reputably prepared food to which preservatives have been added, he said, was as nothing in comparison to the dangers from foods having undergone putrefactive changes. A problem of such importance should be settled by medical men and not in courts of law with a lay jury. Legislative enactments should not be made in advance of scientific knowledge. There must be disabuse of the mind of the criminality of intent on the part of reputable manufacturers and a sharp line should be drawn between adulteration and food preservation. The question to be decided is the action of very minute doses of food preservatives over a protracted period. In order to illustrate the faulty interpretations from research work undertaken on a wrong basis, Dr. Coley cited the papers of Pfeiffer, Kionka and Harrington dealing with sulphite of soda. In all of these studies the amount of the drug used was higher than that employed for preservative purposes; too great quantities of meat were fed to the animals and no variety of diet was allowed. Further, the animals were confined, of questionable health in the beginning of the experiments, and the deductions of these authors were not warranted as far as the use of sulphite of soda as a food preservative is concerned.

BOOK REVIEWS.

Duality of Thought and Language. By Emil Sutro. The Physio-Psychic Society, New York and Berlin.

This volume is said to "show the supremacy of spirit over matter in man," and perhaps it does. At least, far be it from a humble reviewer to say that it does not do that—or anything else that might be mentioned—since any given page in the book is capable of reducing to a state of hopeless bewilderment the said reviewer's intellect. Possibly this is due to an excess of the material in this particular personality; but at any rate it becomes necessary to leave to those with a different mental equipment, whether that difference be spiritual or something else, the elucidation of Mr. Sutro's views on "the voice of the esophagus" and kindred topics.

Clinical Hematology. A Practical Guide to the Examination of the Blood with Reference to Diagnosis. By John C. Da Costa, Jr., M.D., Demonstrator of Clinical Medicine, Jefferson Medical College, etc., Second Edition, Revised and Enlarged. P. Blakiston's Son & Co., Philadelphia.

Hematology, as a special branch of clinical diagnosis, has now developed to such proportions that no one who has not devoted years of time to its pursuit can venture to speak with any degree of authority upon its problems. Moreover, the technic of the various methods now in vogue is so complex and so delicate that only a specialist can master them. It is, therefore, a source of great gratification that Da Costa has prepared a new edition of his excellent book on Clinical Hematology. There are few treatises either in English or in any other language in which scientific precision and thoroughness are united with so notable a gift for exposition. The morphological characteristics of the corpuscles in the various anemias and leucemias are presented in a simple and convincing fashion. The recent advances in hematology, comprising the identification of new clinical entities such as trypanosomiasis, kala azar, Montana fever and chronic polycythemia; the correlation of blood pictures with a number of diseases hitherto unstudied, such as chloroma, syphilitic infection, variola, etc., and the proof of the septic nature of many of the septic infections, are all incorporated in a thoroughly critical and sane manner in the new edition. Among the improvements in technic described are Wright's stain, Milan's method of estimating coagulation time, Reudiger's serum test, cryoscopy, etc. The book is in every way a worthy addition to the scientific and to the practical library of the physiciah.

Poverty. By Robert Hunter. The Macmillan Company, New York.

Mr. Hunter himself says of his work: "The book as a whole has one aim, namely, to show the grievous need of certain social measures calculated to prevent the ruin and degradation of those working-people who are on the verge of poverty." Certainly, if it does not fulfil its purpose wherever it is read, the fault must lie with the reader. It is, above all, a book calculated to make people think—people who might easily, otherwise, never come in contact with the vital questions which it raises. These questions are set forth in a fashion that any one can comprehend. Mr. Hunter's conclusions are supported by statistics enough to be convincing, but not of the labyrinthine sort with which specialists are prone to bewilder the layman.

On the other hand, although he deals with things which might well be spoken with fire in the heart and tears in the eyes, he shows an admirable restraint and balance. His long and varied experience would furnish dramatic instances enough to fill his book from cover to cover, but he uses such sparingly, and all the more effectively.

He has done a distinct public service in separating clearly for the popular mind the problems of poverty and those of pauperism. For those who complacently affirm that the provisions of charity in the present day are so generous and varied that no one need suffer, it is very salutary to be told that "even if this were true, it would not materially lessen the sorrow of the poor."

Mr. Hunter does speak, in the chapters on "The Pauper" and "The Vagrant," of those who are dependent upon charity; but the greater part of his work is concerned with those who keep just above the line of pauperism, who do not habitually apply for assistance, but who are continuously ill clothed, ill housed and ill nourished, in spite of their best efforts. To select for quotation any one of the points he makes in demonstrating the magnitude and significance of this class would be an injustice to the others; and the reviewer can only refer his readers to the book itself where the problems of poverty, as they concern the poor in general, and the sick, the child, and the immigrant in particular, are treated with a psychological and economic insight which never lacks sympathy, and a sympathy which never lacks wisdom or degenerates into sentimentality.

A Compound of Medical Latin. By W. T. St. Clair, A.M. Second Edition, Revised. P. Blakiston's Son & Co., Philadelphia.

This is a useful little volume. For the medical student whose knowledge of the Latin language is limited to the few etymological roots acquired during his adolescence the work will be found of value. Even to the college graduate, for many have no knowledge of Latin, it will prove of service.